# AMERICAN GAS ASSOCIATION MONTHLY

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## Fifth Annual Convention Atlantic City

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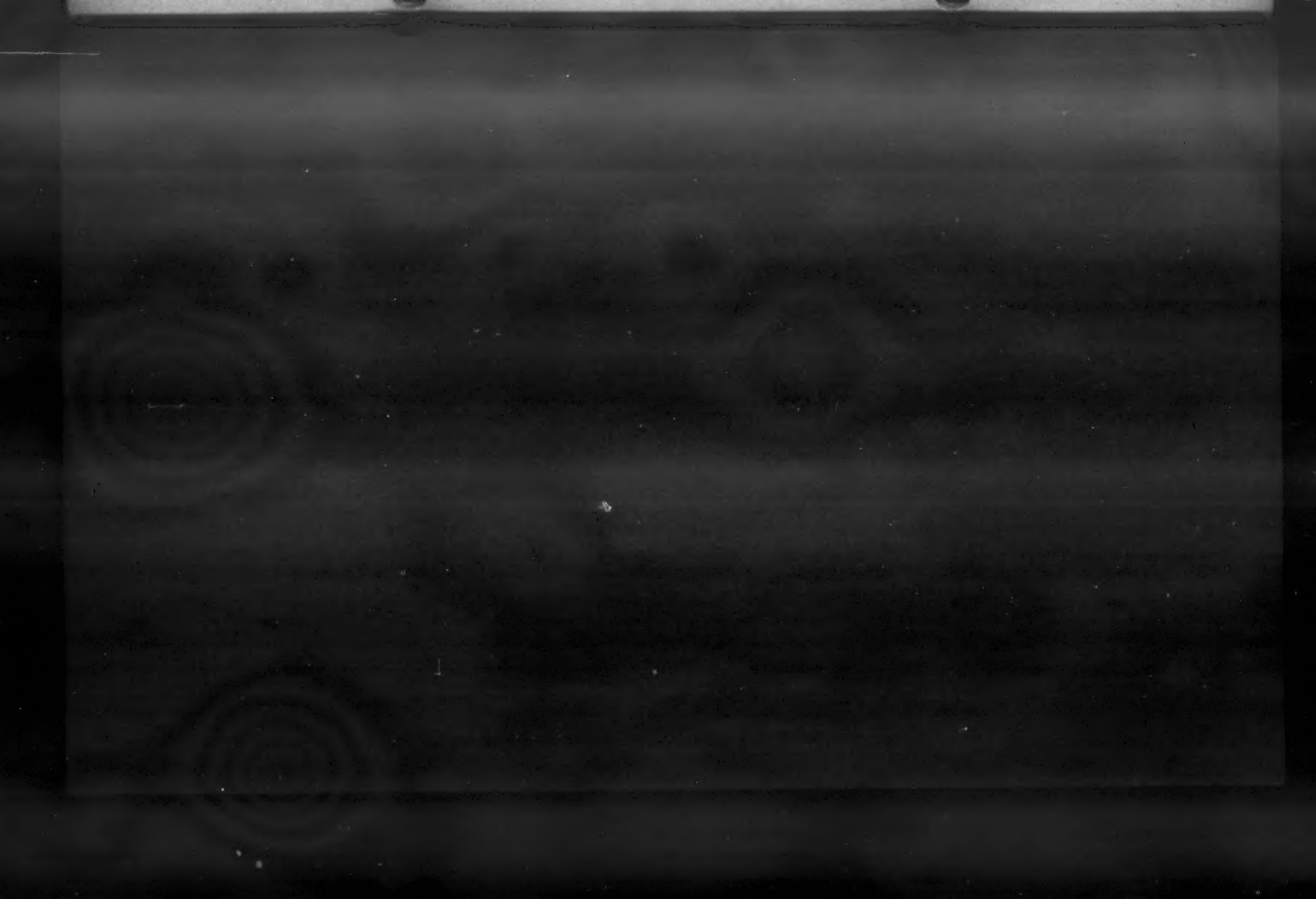

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# Milestones

In olden times the traveler by stage coach or post kept track of his progress by the milestones that he passed. With the exception of well-known landmarks on oft traveled roads, these milestones were the only indications that he had of the progress he was making toward his goal. And even today, the traveler looking out from his window as his train rushes along, sees the milestones, set along the right-of-way, which mark the progress of his swift journey.

So we may say that progress toward any goal, whether of accomplishment, of co-operation, of organization or any endeavor, like the progress of the traveler toward his journey's end, is marked by milestones.

In a sense, then, the Annual Conventions of our Association, the national organization of our great industry, might be considered as milestones in the advancement of our industry along the road which ends in the maximum of usefulness and service both internally and externally.

If they are true milestones, as we claim, let us see how far they indicate we have traveled along this road.

Starting in 1919 there were gathered together at our First Annual Convention some 1,200 members and guests from our 302 gas company, our 148 manufacturer company and our 1,700 individual memberships and the exhibition included 103 exhibits.

In 1920 our Second Annual Convention was attended by 1,600 members and guests from our 441 gas company, our 211 manufacturer company and our 2,140 individual memberships and the exhibition included 112 exhibits.

In 1921, at our Third Annual Convention, we had 1,200 members and guests in attendance from our 462 gas company, our 231 manufacturer company and our 2,135 individual memberships and the exhibition included 111 exhibits.

In 1922 the Fourth Annual Convention brought an attendance of 2,700 members and guests from our 472 gas company, our 236 manufacturer company and our 2,066 individual memberships and the exhibition included 136 exhibits.

Now we are proud of this steady record of progress along the road of accomplishment as evidenced by these milestones. But we are prouder of the fact that the coming Fifth Annual Convention promises to surpass all these others with an attendance that will probably reach 4,000 members and guests from our 490 gas company, our 270 manufacturer company and our 2,300 individual memberships and with an exhibition that will probably contain 200 exhibits.

These are the reasons that we say that our Conventions are true milestones showing the progress of the Association in its work of co-ordination, accomplishment and endeavor.

Can anyone miss being with us when we pass this fifth milestone?

AMERICAN GAS ASSOCIATION MONTHLY

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# Public Utility Problems from a Manufacturer's Viewpoint

GEORGE A. HUGHES, President, Edison Electric Appliance Co., Inc.

ON "UTILITY PROBLEMS from the Manufacturer's Viewpoint"— the subject which has been assigned to me—I have not been content to deal with surface manifestations. On the surface, there seem to be many problems; but when we plumb to the depths we find there is fundamentally one problem, and it is the same problem for the manufacturer as for the producer of utility service.

### *Fundamental Problem of Ownership Emphasized*

The problem to which I refer is the broad one of ownership, and management, the problem of private initiative in industry versus public ownership and socialism. I know that the subject of public ownership has always been with us more or less, as public utility men—I say with us, because a large part of my experience has been in the central station field. I realize that the general subject is not new, but the seriousness of this problem has been brought home to me by the fiasco of my boyhood state, North Dakota, in its ill-conceived excursion into socialism—an entire State gone wrong! I am also greatly impressed through my experience in the recent fight in California. There the public utilities were threatened with confiscation through a proposed amendment to the constitution, bonding the state for five hundred million dollars, for the purpose of engaging in the water and power business, or taking over the privately owned companies. While the measure was overwhelmingly defeated after an intensive educational campaign, the fact that it was even seriously considered in a state where the electrical development is so advanced that it is one of the great achievements of American industry, makes it a matter of great concern.

With your indulgence, therefore, I shall attempt to go to what I conceive to be the very bottom of this problem, a problem which we cannot ignore—which

*An address delivered before the Missouri Association of Public Utilities.

we must meet clearly, understandingly and bravely, if we expect to do our duty to our nation and our generation.

*Body of Scientists Failed in Scientific Test*

Several years ago a scientific association met in a city of continental Europe. Lawyers, psychologists and physicians, men well trained in careful observation, made up the group. Down the street that same evening, a carnival was in progress. Suddenly, into the scientific meeting there burst a wildly excited fellow in a clown costume, followed by a negro with a revolver in his hand. The two rushed madly around the room, shouting wildly at each other. They finally met, a scuffle ensued, a shot was fired, and immediately the two rushed out into the darkness. The president of the association then said: "Fellow members, will each of you take pencil and paper and write down at once just what you witnessed?" All complied and soon the papers were finished and collected. "And now," said the president, "let me say that this was all a put-up job. These intruders were actors, hired for the occasion. Their little drama has been carefully rehearsed, and we have a record of everything in regard to it. The purpose of it all has been to discover how accurately the human mind observes. As scientific men, you will doubtless welcome the experiment. It is desired to know to what extent we are biased by our emotions, prejudices and impulses."

A study of the accounts written by these men showed startling discrepancies. Scientific men though they were, yet they reported that they saw things that had not been there; they heard things that had not been said. It was a most remarkable proof that the human mind, far from being that cool, clear-sighted observer and reasoner about the facts of life that we all like to give it credit for being, is greatly moved by passion, emotion and prejudice. We see things that we want to see, and if we don't want to see a thing, we swear that it isn't there. On the most insufficient evidence, we build up a great system of beliefs about life, and then we go ahead and judge life on those beliefs irrespective often of the facts which may go directly counter to them.

*Attitude of Public Mind*

I bring these thoughts to your attention because they may help to explain some of the outstanding features of the attitudes of people toward the problem of private versus public ownership, specifically the ownership of public utilities. It helps explain why, in the presence of the facts, people can hold and hold in all sincerity, diametrically opposite views.

*Are We Figuratively Color-Blind?*

It may be a bit startling for the normal individual to be told that he cannot see straight, that he twists and distorts the facts of life, that he sees what he wishes to see and is blind to what he doesn't wish to see. They say that often a color-blind person not only does not know that he is color-blind, but resents being told that he is. Having been color-blind from birth, he has built up his world of color the way he sees it, and has been satisfied with it. He has not yearned to see certain colors of which he is totally ignorant. When you tell him that that color which he thinks is dark green is really a wonderful red, he feels annoyed with you, who would deprive him of the satisfaction of feeling that the world is just as he sees it.

Nevertheless, I shall be bold enough to attempt to show that we,—all of us—

are figuratively color-blind, that we see many of the facts of life not as they really are, but as we want them to be, that this moral of social color-blindness largely accounts for the fact that today we have a labor problem, a radical problem, and a problem of class hatred.

*Modern Idols*

That great Englishman of a few centuries ago, Francis Bacon, called attention to the fact that the human mind erects what he calls idols, or false notions of things, erroneous ways of looking at nature. He spoke of idols of the tribe, idols of the cave, idols of the market-place, and idols of the theatre. I do not intend to follow his classification; nevertheless, I want to point out to you some of the idols of modern life, the erroneous ways of looking at things, the bogeys that we create in our own minds out of nothing.

And before I proceed, allow me to say that I am offering these suggestions in nothing of the "holier than thou" spirit. I do not pretend to be the clear-seeing soul who stands apart and holds the rest of humanity up to scorn. On the contrary, I have a painful suspicion that I have these errors of mental vision as plentifully as the next one. Will you pardon me if I suggest that you, my hearers, are also liberally endowed with them?

And now, having included ourselves in the group of the offenders, finding ourselves standing in the way of the sinner rather than sitting in the seat of the scornful, with perfectly good grace we can berate dear old humanity to our hearts' content.

*The Idol of Class Hatred*

The first great idol or bogey, or erroneous thought, to which I would call your attention is that of class hatred. This, I shall try to show, is one of the most important factors which enters into our fundamental problem of ownership. There is today, and there always has been, an immense lot of class feeling in the world. Our error lies in our belief that it needs to exist.

*Class Hatred Succeeding Sectional Antagonism*

The antagonism of class against class has been growing in America. Once it was hatred of one section, state or city by another. But this has largely disappeared with the improvements in transportation and communication, while class antagonisms of various kinds have taken its place.

The most outstanding of these class hatreds at the present time is the so-called conflict of labor and capital. I want to call your attention to the fact that fundamentally no reason exists for this antagonism. Capitalism is largely a myth, a bogey man. We are all laborers and all capitalists. We are all working men and children of working men. All the country's leaders, in every branch of achievement, have come from the families of toilers. This is a toilers' America. Its business—its industry, transportation and commerce, has not been imposed on the working man by tyrannical persons from above. On the contrary, it is a system which the toilers themselves have evolved with the help of those of their members better endowed with inventiveness, planning and management.

"But," you ask, "if this system of modern industry and commerce is something which the toilers themselves have evolved, why is it that they do not recognize it as their own creation, but rather look upon it as an outside force, with which they are not always entirely in sympathy?"

*Society Afflicted with Growing Pains*

The answer is that the modern world has been growing at a tremendous rate in a short time, and is afflicted with growing pains. Contrast the kaleidoscopic changes in the last centuries with the slow evolution of man's material progress during the previous centuries. In fact, his tools up to recent times were simple and varied developments of rude and elemental instruments used in the dawn of civilization; and hardly more advanced was his control of Nature's elements. The important inventions prior to the year 1800 included scarcely more than the mariner's compass and the printing press. Man-power and horse-power, animal muscle—aside from the gun powder discovered by the Chinese—were the chief sources and expression of harnessed energy.

Road building reached a climax in the old Roman roads, and became a lost art; Caesar's post dispatch was never equalled until the mail service of modern transportation. For quicker transmission of intelligence, no advance was made on the ancient Persian semaphore, until the modern telegraph. All the tremendous transformation in every phase of existence which has almost annihilated distance, and the great changes of material civilization, due to the harnessing of electricity, steam and other fuel energy, together with X-rays and wireless—all has been within the last century.

Rapid changes are always upsetting, because people have difficulty in adapting themselves readily to them. The result is bound to be a vast amount of complaint. History has revealed this phenomenon again and again. During the first hundred years while Rome was growing from an insignificant village of shepherds to her place as mistress of the world, her annals are replete with fights between the patricians and the plebians of her citizenry. But after she had reached the acme of power and ceased to grow, we hear no more about these political contests. They were quieter and more comfortable times, because they were times of stagnation.

*Modern Industrial Civilization a Vast Complex Machine*

In these modern times of rapid growth, in which we are making over the whole world within a few generations, it is natural, and we should expect, that violent differences of opinion will arise. Some will cry out that things are moving too fast for them; others will complain that the very rapidity of the progress is being unjust to them.

That is all to be expected. But during it all, we should not get confused in our thinking. We should not set up a straw man of class hatred. Rather we should realize that such a tremendous thing as modern civilization, like a vastly complex machine, is bound to develop a certain amount of trouble. When this trouble appears, our job is not to start fighting one another. Rather it is to roll up our sleeves with one accord and straighten things out. For we are all embarked on a great common enterprise.

*Class Conflict a Bogey Man*

If the necessity for class antagonism is really a myth, a bogey man, plainly one very good way to overcome it is by means of publicity and education. I believe that those engaged in industry, from the smallest to the greatest, should get a really truthful conception of this great entity with which they are connected. Training of some sort should be a part of the policy of every business organization. Often men fear and hate things which they do not understand. But let

the worker begin to get at the truth of the matter and to see the reasonableness of the condition, institution or process, and his antagonism is more than likely to turn into appreciation and greater co-operation. So much for the first great idol or erroneous way of thinking.

*Deifying Beliefs*

And now I have one other idol to which I wish to call your attention. I refer to the tendency we all have of deifying our beliefs, of taking mere theories and opinions and giving them all the sacredness of eternal laws.

Anyone who is wide-awake to the facts of history and the happenings of the modern world, realizes that very few of our beliefs have all the immutability of the eternal. For ages people believed that the earth was flat. Finally, along came Copernicus, who proved that the earth is but a tiny spinning ball, the insignificant satellite of an inconspicuous sun in a vast stellar universe. For several hundred years we have accepted as gospel truth the gravitational laws of Newton. Now along comes Einstein, and shows us that we must modify our conceptions of the laws of gravitation. Modern physics has long accepted, as one of its basic laws, the indivisibility of the atom. Now comes the discovery that the atom, far from being indivisible, is a great mass of hurtling electrons.

*Beliefs Should Bow to Facts*

In the presence of these startling discoveries, we should be mightily humble about our beliefs. Beliefs are good things. They are working plans that help us to get along day by day in the world. But our beliefs should always bow to the facts. If the facts show our beliefs to be wrong, then we should discard our beliefs or so modify them as to conform to the truth as we find it. We deify some of our beliefs into a sort of religion, and then we try to bend the facts to fit the belief. And so, in the presence of truths as plain as day that point us in the contrary direction, we go on cherishing our false or one-sided beliefs as if they were both the Law and the Prophets.

*Reactionary Blocks Progress*

Now I might go on to show you that one extreme example of the person who clings blindly to his beliefs and fails to look the facts in the face is the reactionary, the backward looker, the individual who believes that the only perfect things and institutions are those that have come down from the past, that every new thing is wrong. I am not going to dwell on the reactionary. My reason for refraining is not a desire to deal kindly with him. I believe, as I think you do, that the reactionary, for all his sincerity, is a drag on the wheels of our progress. But no great body of persons is really campaigning for reaction here in America; and inasmuch as my time is limited, and as there is considerable propaganda of another sort to be considered, I will now hasten on to a consideration of this other extreme.

*Radicals Visionary*

This other extreme is radicalism. In our economic and political world, radicalism means a more or less extreme form of collectivism, expressed by such terms as public ownership, socialism, communism, and bolshevism.

The radical in this field has reared his beliefs into a religion. He has envisioned humanity as marching along a road that started in savagery and individualism and which will end in an absolute collectivism. Believing implicitly in this destiny for the race, he makes all the facts of life conform to his theory. Not only

that, but he has created a more or less hard and fast form which this collectivism is to take—a form for which perhaps the word socialism is the most generic name. And so he has made a religion of socialism.

Now my contention is that no one is justified in making a religion out of any earthly belief. I feel, as I think you all do, that the history of the human race has been one of progress in collectivism. As near as we can learn, the first associations of human beings were small groups of single families. These grew into tribes and clans, and then became nations. But we are not justified, on account of this slight knowledge, in erecting any such hard and fast scheme as has become the religion of the Marxians and that the human race must go to the tailors tomorrow and fit itself with the monotonous clothes of communism.

*Should Collectivism Crush Individualism*

A factor that enters into the discussion is "individual initiative." Many persons believe that, in a state of savagery, individual initiative is high, but, strange to say, it has been the modern age, an age of higher collective development than that of savagery, that has welcomed individual initiative.

Our civilization of the past few hundred years, a civilization of great nations, of international trade and credits, of complex schemes of industry, transportation and commerce, of millions spent for education—all highly collectivistic activities—this civilization has welcomed individual initiative to a degree far and away beyond the possibilities of past ages. In fact, individual initiative has largely made modern civilization.

I trust that I am driving home to you the fact that, even though the trend of history shows itself to be in the direction of better organized collectivism, we are not justified in concluding that the only form this collectivism is to take is public ownership and management of the means of wealth. The good things in our civilization, such as health, happiness, equality of opportunity, liberty, the right proportion of useful work and leisure, and the encouragement of individual initiative which shall result in new discoveries and inventions and betterments of human conditions and activities—all these should be preserved, and class hatred and ignorance eliminated.

*Public Ownership of Utilities in Practice*

Now any economic and political theory that would win the approval of the public must promote the good things of life and eliminate the bad to a greater degree than is possible under the theory that it seeks to displace. If public ownership seeks to displace private ownership, it must be because it is a better system in practice, not because it is part of a theory which some people believe is wrapped up with the destiny of the race. Never mind the theory; stick to facts. And what are the facts? Since our subject is public utilities, what are the facts relative to private versus public ownership of public utilities?

Let me say that on this subject I have no new facts to present—no facts that you probably do not know already. Neither do I propose to burden you with details. I wish merely to call the roll of a number of publicly owned and operated utilities, and to emphasize that these activities have not been and are not being managed in accordance with the high standards of efficiency and service for which the privately owned and managed activities are notable.

*Russian Fiasco*

The most flagrant case of inefficient management is the Russian fiasco. Here the people took over vast properties and practically ruined them. Inefficiency, idleness, decay, famine and depopulation have come in the wake of this high-flown attempt of an utterly unprepared people to manage a highly complex activity.

But Russia is not alone of European nations in her failure at public management. Reports from both Italy and France show that publicly owned and managed properties in those countries have such a record of inefficiency that a movement is now on foot urging the return of these properties to private control.

*Failure of German Socialism*

When the revolution occurred in Germany, a socialistic government took charge of affairs. Yet, when confronted with the actual task of running the government and keeping down taxes at the same time, the government acknowledged itself unequal to the task, and gave private initiative every encouragement. They seemed to say that if a country is rich and can afford to be lavish with its money, then socialistic schemes may well be tried, for there is always the patient public to make up the deficit through increased taxation. But let a nation find itself getting down to the bottom of the barrel, where not a crumb is to be wasted, and then public ownership proves itself deficient.

*Government Operation of Railroads*

During the twenty-six months of the war period and afterward, the United States Government took over the management of the railroads of the country. The result was a deficit of $1,800,000,000. Then the properties were turned back to their owners, and despite almost strangling regulation from the outside, the roads, within the past several months, have been winning a magnificent battle in efficient, profitable operation.

Another example of government ownership of railroads is found in Canada, where the lines of the Canadian Pacific are paralleled by a government railroad, from Montreal to the Pacific Coast. These railroads serve the same communities. The Canadian Pacific, with a high degree of efficiency and service, earns a profit, while the government road shows a large deficit.

*Comparative Results in Glasgow*

An excellent comparison of publicly and privately owned and managed utilities is afforded by the records of the electric light department of the Glasgow Corporation, owned and controlled by the city of Glasgow, Scotland, and the Clyde Valley Electric Power Company, a privately owned and operated company supplying the same class of customers. I learn that for the year ending June 30, 1920, the city concern produced 148,000,000 kilowatt hours at a loss of one-sixth of a cent per kilowatt hour. The privately owned concern produced 122,000,000 kilowatt hours, at a profit of one-quarter of a cent per kilowatt hour.

In this country, 97% of all the electric current is produced by electric light and power companies under private ownership, and at a lower rate to the consumer than that produced by the municipal generating stations.

*Private Management Vindicated*

I am engaged in a business which largely depends upon low rates and good service on the part of the public utilities for its success—namely, the manufacture

and sale of electrical household appliances. Therefore, if I were not sincere in my belief that the privately owned utilities render better service at lower rates, I would certainly favor publicly owned plants. In our business it is necessary for us to know the situation in various communities throughout the country where electric current is available, and without exception we find that public ownership means a minimum use of those labor-saving devices that make life easier for the woman who runs a home. My company, for a considerable period of time, operated a manufacturing plant on the lines of the hydro-commission in Canada. This Canadian hydro-development is often referred to by the proponents of public ownership as a shining example of successful public operation. The fact is, that both at our Chicago and California factories, we buy electric current cheaper from private companies than we did from the publicly owned company in Canada. It is not generally known that while the rate at Niagara Falls is very low, the rate increases in proportion to the distance from the Falls, until at the end of the hydro-commission's lines the rate is as high as 18 cents per kilowatt hour.

*North Dakota Socialistic Crisis*

The North Dakota socialistic public ownership experiment has already been referred to. I can best give you the results of it by quoting from the report of the Industrial Commission of North Dakota, headed by Governor R. A. Nestos, who was elected governor when the socialistic adminstration was recalled. This report suggests the remorseful resolutions of a man recovering from a long spree. The Commission, which found waste and extravagance everywhere, but could not find a million dollars which the Bank of North Dakota had carelessly mislaid, came to the following illuminating conclusions:

"When a government gets out of its domain it loses efficiency, mutiplies leaks and gives an opportunity for controlling the electorate by inflated payrolls. Between the possible and impossible, the line of distinction when faintly drawn finds men ready to stake the taxpayers' money on the most ill-conceived and visionary projects. In the promptings of a political leader the Non-Partisan League had its birth, and in the patronage victory at the polls found its signal achievement.

"During the reign of the so-called league industrial program, under which the state has been staggering, nothing is lacking but success—not one oasis in the dreary waste of failure. We wish a better report could be made, if by refusing to see the truth we could expunge the past and restore the lost funds of the people, we could close our eyes. Not all the employees of the state serving under the Industrial Commission were incompetent or unmindful of the State's welfare, by any means, but those who are competent and had high ideals were, it seems, judging by results, in hopeless minority.

"From the launching of the business activities under the commission, there has been an almost total lack of organization. Many causes have contributed to the disastrous results that confront us among which may be named false theories, lack of training on the part of those named as managers, the newness of the work, ill-defined duties, wide powers under the laws and lack of judicial interpretation; but most of all, official incompetency and a failure, either through inability or overconfidence on the part of the former commission, to exercise adequate supervision.

"The report tells how with the 'new freedom,' as it was called, came a radical departure from accepted business standards and practice. The leading officials and employees cultivated politics as a fine

art, and traveled hither and thither without public purpose, and scattered with a lavish hand what others had garnered. The orgy of spending stopped only when the Bank of North Dakota ran out of funds. And the taxpayers paid, or will pay, for it all."

*Public Ownership a Child of Politics*

I need hardly remind you of some of the reasons why public ownership does not work out well in practice—why, nevertheless, there is a recurrent demand for it, and what our remedy should be against it.

Public ownership is inefficient primarily because it has every incentive to be inefficient. Public ownership is a child of politics, and politics do not promote efficiency. Jobs are secured and held by political pull, not through merit. Moreover, the system is generally strangled in red tape, and is very inflexible. Another pronounced cause of inefficiency in publicly managed utilities is lack of responsibility. One of the great tenets of scientific management is that responsibility shall go with control. Give a person or a corporation control over a property or a field of activity, but hold it strictly responsible for results in that field. Now the private institution never gets away from that responsibility. Over it forever hangs the sword of Damocles. "Render satisfactory service at a reasonable price" is the command ever sounding in its ears.

The consequence is that the privately owned and managed concern is constantly alert to cut out waste, to reduce lost motion, to discover new improvements, to open up new markets. It must be progressive or perish. But a publicly owned plant is subject to no such stern, rigorous discipline. Through tax exemptions and other favors, it can take unfair advantage of its private competitor. It can hide its operative inefficiencies from the public eye. And when the inevitable deficit appears, it can often rely on a complacent public to accept the increased taxation necessary to wipe out that deficit.

*Radical Political Agitators Menace to Prosperity*

And yet, although the cold facts show, in a long record of case after case, that publicly owned and managed utilities are less efficiently operated than privately owned, there is, nevertheless, a recurring demand for public ownership, because of the interest continually stirred up by certain types of public men and others who are aspiring for popular leadership. These men, indifferent to the real mischief created by their activities, are constitutional busybodies, naturally suspicious, and engaged in the work of public meddling, because of the ease with which they can draw attention to themselves by such activity, especially in attacking large interests and because it is so easy in such work to blind the crowd with the glamour of plausibility. Our national railroads during the past few decades have been the especial targets of such political leaders. The mischief can hardly be measured. Yet the public has stood for this harassing interference and embarrassment against one of the chief factors of our general welfare. What would this country be; what would the farms or businesses be without the railroads? These agitating radicals and socialistic foes of our national transportation are, therefore, foes of the general public and a menace to prosperity.

These men have a certain following and more or less support or they could not continue.

The pernicious activities of the radical bloc in the United States Senate, for ex-

ample, are not only being suffered, but supported and yet, as pointed out in a recent editorial: "A Senator who would plan to spread boll weevil in cotton crops, blight in orchards, destructive insects in wheat, moth in woolen factories and Colorado beetles in potato plants, would be mobbed, but in what essential, so far as results are concerned, would such conduct differ from the assaults made on the railroads?"

If you as public utility men have your busybodies and meddlers, your socialistic dreamers and others who are seeking to build themselves up by tearing institutions down, just remember the aggravating embarrassment which our national railroads have suffered and if their opponents have had some measure of success remember that there is likely to be even a greater tendency towards shooting at the target of public utilities.

*Blindness of Prejudice*

What is the reason for this attitude in the face of facts?

I have already given the reason. It resides in the human mind. We are, indeed, a great nation in our material progress, but alas, we have not kept pace mentally with our material strides. As I have already said, we are moving fast in our progress; many minor hardships of maladjustment are bound to occur. Irritation will, therefore, naturally arise in this rapidly progressing nation, just as bubbles arise in a boiling kettle. But we don't always ascribe the right causes to these maladjustments. Instead, we erect a myth or bogey, someone whom we can make "the goat." It is much easier for us to vent our spleen on some imaginary enemy or tyrant than it is to patiently delve into the difficulty and try and locate the trouble. And so we shy our verbal brickbats at "the interests," or "the capitalists" or "Wall Street," or some other bogey man. In this state of mind, we naturally begin searching about for a remedy, and here the sweet, comforting phrase of "public ownership" comes to our aid.

There is a world of attractiveness in that phrase. It implies something for nothing—it implies generous treatment. It is a phrase replete with hypnotic suggestion, and the radical or unscrupulous political agitator uses it with telling effect on the minds of the uninformed.

*Education by Advertising Will Help Solve Problem*

The answer to all this is enlightenment —publicity.

It is not a bad system that is causing the trouble. It is not greed. It is not a fundamental difference in interests. Our system is basically sound and desirable. Moreover, we Americans are not greedy; on the contrary, we are generous. Furthermore, we have no fundamental differences among different individuals and classes. Our differences are trivial, our points of unity and harmony, profound.

No, the trouble is ignorance. This ignorance is imprisoning us, shackling us. It is the truth that will make us free. Every public utility, I feel, is no different from a manufacturing enterprise. It has merchandise of service to sell the public, and it has not made a satisfactory sale until it has thoroughly sold its public. It must create good will, satisfaction, understanding, and manifest willingness to co-operate. While the public hangs back, while it is suspicious, while it nourishes antagonism, it is not a satisfied customer.

Therefore, go in for publicity, for advertising. Make it a part of your necessary cost of doing business. For you need

(Continued on page 575)

## GENERAL

### CHAIRMEN OF GENERAL COMMITTEES ORGANIZED TO DATE

**Accident Prevention**—F. W. Fisher, Rochester, N. Y.

**Amendments to Constitution**—Wm. J. Clark, Mt. Vernon, N. Y.

**American Engineering Standards Committee, Representative on**—A. H. Hall, New York, N. Y.—(Alternate Representative) W. J. Serrill, Philadelphia, Pa.

**Representatives on Sectional Committees**—Underground Construction—National Electrical Safety Code—C. C. Simpson, New York, N. Y. Illumination, Nomenclature and Photometric Standards— W. J. Serrill, Philadelphia, Pa Ventilating Code—Geo. E. Bennett, New York, N. Y. Safety Code Correlating Committee—W. R. Addicks, New York, N. Y.—(Alternate Representative) Donald McDonald, New York, N. Y. Safety Code for Laundries—A. L. Palmer, New York, N. Y.

**Award of Beal Medal**—R. B. Brown, Milwaukee, Wis.

**Chamber of Commerce**—D. D. Barnum, Boston, Mass.

**Cooperation with Educational Institutions**—C. N. Chubb, Davenport, Ia.

**Customer Ownership**—Chas. A. Munroe, Chicago, Ill.

**Education of Gas Company Employees**—B. J. Mullaney, Chicago, Ill.

**Finance**—James Lawrence, New York, N. Y.

**Gas Safety Code**—W. R. Addicks, New York, N. Y.

**Gas Standards**—J. B. Klumpp, Philadelphia, Pa.

**Geographic Sections**—L. R. Dutton, Jenkintown, Pa.

**National Fire Protection Association**—R. S. Doull, New York, N. Y.

**Nominating**—C. M. Cohn, Baltimore, Md.

**Rate Fundamentals**—R. A. Carter, New York, N. Y.

**Rate Structure**—T. V. Purcell, Chicago, Ill.

**Representation on National Joint Committee of Public Utility Associations**—D. D. Barnum, Boston, Mass.; R. B. Brown, Milwaukee, Wis.; R. A. Carter, New York, N. Y.; B. C. Cobb, New York, N. Y; H. L. Doherty, New York, N. Y.; O. H. Fogg, New York, N. Y.; C. H. Geist, Philadelphia, Pa.; A. P. Lathrop, New York, N. Y.; Chas. A. Munroe, Chicago, Ill.

**Standard Gas Appliance Specifications**—W. T. Rasch, New York, N. Y.

**United States National Committee of International Commission on Illumination, Representative on**—Howard Lyon, Gloucester, N. J.

# Hire Them During Good Behavior

*An editorial from the Portland (Oregon) Oregonian worthy of consideration.*
(Editor's Note.)

The change in the view of public service corporations from privileged institutions enjoying a private snap called a franchise to public servants hired to supply certain necessities has developed other ideas. When the right to use the streets was treated as a valuable privilege, permitting the holder to charge all that the traffic would bear or all that its terms stipulated, it was granted for a fixed term and all obligations of the holder had to be met within that term. If large expenditures became necessary near the end of the term, money could not be borrowed on long-term bonds extending beyond the term at low interest; it had to be borrowed on notes due within the term and to be paid from earnings during the life of the franchise, also bearing a high rate of interest. Cost of service was raised by the amount of this principal and interest, and the public paid in corresponding higher rates.

The corporation is now regarded as a public servant—a sort of hired man to supply gas, electricity or transportation. It is authorized to use the streets for those purposes, and its charges are regulated by a public commission to require a certain quality of service and to yield a certain rate of income on its plant over cost of service. This plan permits of no value as attaching to the franchise. If income on such value were included in cost of service, the public would in effect be charging itself for the use of its own

streets. The public, on the contrary, is directly interested in keeping down the expenses of a company, for it thereby keeps down the rates that it pays.

When that is the situation, any limit to the period during which a company has the right to occupy the streets works directly against those whom it serves. When that limit is near, the company must either pay high interest in order to make improvements or repairs or it must let its plant run down. In the former case the public pays high rates to cover the loan and interest; in the latter case it gets poor service. The way to escape the dilemma is to fix no time limit to the franchise, to regard the company as a man hired to work for the public with his own tools, and to let it hold the job as long as it does well. This plan has been found to work to the public advantage in more ways than one. A company that gives poor results can be "fired" without the long, costly process of forfeiting a franchise, but it can hold the job indefinitely, provided it gives good service. It can, therefore, maintain and improve its plant at minimum cost. The company is on its good behavior, and the public gets good service at reasonable rates.

But much depends on the type of men that the people elect to the public service commission. If they elect men competent to solve intricate business problems, who act as unprejudiced judges between the corporations and their customers and who have courage to do an unpopular thing when justice dictates, they will be well served and the corporations will do their duty, both to hold their jobs and because they can be confident of a square deal. If the people elect incompetent men or men who play politics with their jobs, service will deteriorate, through lack of efficient supervision, through inadequate rates and through doubt on the part of companies that they will hold their jobs.

## New Members

### GAS COMPANIES

Florence Gas & Fuel Co.,
S. W. Brown, Sec.-Treas.,
Florence, S. C.

City Gas Co.,
S. J. Jones, Mgr.,
Marquette, Mich.

Peoples Gas & Electric Co.,
F. P. Bowen, Genl. Mgr.,
214 Main St.,
Savanna, Ill.

The Ashtabula Gas Co.,
F. W. Stone, Mgr.,
6 Progress St.,
Ashtabula, Ohio.

### MANUFACTURERS

Ditto, Inc.,
530 South Dearborn St.,
Chicago, Ill.

Barber-Greene Co.,
H. S. Greene, V. P.,
West Park Ave.,
Aurora, Ill.

Payne Dean, Ltd.,
Payne Dean, Pres.,
P. O. Box 1051,
Stamford, Conn.

The American Manufacturing Co.,
R. J. Hutchins, Sales Mgr.,
Ray St. & Deeds Ave.,
Dayton, Ohio.

# Entertainment Program

## Fifth Annual Convention*—October 15th-19th, 1923

THE ENTERTAINMENT COMMITTEE has arranged the following program which contains some unusual and distinctive features.

**Tuesday Evening, October 16, 8:30 o'clock**

Informal dance in The Convention Hall at the ocean end of the Steel Pier. Good music—Special entertainment features—Refreshments.

Members and their guests will be admitted to the Pier on this evening on showing the Convention badge.

**Wednesday Afternoon, October 17, 3 o'clock**

The Association will entertain as their guests the ladies attending the Convention at a card party and tea in the Submarine Grill of the Hotel Traymore.

Tickets for this function will be obtainable at the Registration Desk on the Steel Pier up to 6 o'clock Tuesday, October 16th, on presentation of the stub attached to the special announcement in the Convention Program.

**Wednesday Evening, October 17, 8:00 o'clock**

The Public Relations Symposium will be held on this evening in the Rose Room of the Hotel Traymore. Besides the eminent speakers provided, there will be musical selections by the Madrigal Singers of Philadelphia, a well-known choral organization.

**Thursday Evening, October 18, 8:30 o'clock**

On this evening, the Association has taken for their exclusive use the Steeplechase Pier and all its attractions. This Festival Night should prove to be one of the most enjoyable evenings ever spent by our members and guests. The many innocent and fun provoking shows on this pier are guaranteed to renew our youth. Personally conducted by some of our most prominent members—pop corn, peanuts, pink lemonade and hot-dogs— Carnival suits—Continuous dancing in the new ball-room—Special contests and prizes. An excellent chance to become better acquainted and forget for one evening the advancing years and business cares and worries.

Members and their guests will be admitted to Steeplechase Pier on this evening by ticket only. These tickets will be on sale at the Registration Desk and the price is $3.00 which covers all entertainment features during the Convention.

**Golfing**

Arrangements have been made with the Seaview Golf Club for extending the privileges of their course and house to any of our members desiring to play

*Tentative program subject to slight changes or additions.

during the Convention week up to and including Friday, October 19th. Cards of introduction will be available at the Registration Desk. The regular club charge for greens, fees, etc., will be made.

**Cooking Demonstrations and Lectures**

On Wednesday and Thursday mornings, October 17th and 18th, respectively, Miss Ada Bessie Swann, of the Public Service Gas Company, Newark, N. J., will lecture and give cooking demonstrations in the Auditorium, second floor, Boardwalk end of the Steel Pier.

# Nominating Committee Reports

The Committees, appointed for the purpose of selecting candidates for the offices of chairman and vice-chairman of the various Sections, submit the following unanimous reports:

Accounting Section

For Chairman, W. A. Sauer, The Peoples Gas Light & Coke Co., Chicago, Ill.

For Vice-Chairman, H. C. Davidson, Consolidated Gas Co. of New York, New York, N. Y.

Advertising Section

For Chairman, James M. Bennett, The United Gas Improvement Co., Philadelphia, Pa.

For Vice-Chairman, F. L. Blanchard, H. L. Doherty & Co., New York, N. Y.

Manufacturers' Section

For Chairman, G. W. Parker, Russell Engineering Co., St. Louis, Mo.

For Vice-Chairman, E. E. Basquin, The Surface Combustion Co., New York, N. Y.

Industrial Gas Section

(Report not received)

Commercial Section

(Report not received)

Technical Section

For Chairman, L. J. Willien, C. H. Tenney & Co., Boston, Mass.

For Vice-Chairman, Geo. H. Waring, American Public Utilities Co., Grand Rapids, Mich.

# More Tourist Camps Equipped with Gas

WE PUBLISHED, in the July issue, "Educating the Summer Tourist," which described the equipping with gas of tourist camps by the Valparaiso Lighting Company and the Utah Gas & Coke Company. Since then we have learned that the Great Falls Gas Company at Great Falls, Montana and South Haven Gas Company at South Haven, Michigan, have also been utilizing this novel method of bringing gas service before the public.

At Great Falls the camp is equipped with hot plates and prepayment meters and there is a water heater also in service. The gas company started this work in 1921 and since then there has been an average of 4,000 people at the Great Falls tourist park each year.

The South Haven Gas Company has also been doing this same valuable and useful propaganda work for the last three years in their local tourist camp. That the results have been excellent is clearly shown by the happy group in the accompanying picture, a view of a bit of this attractive camp.

These companies are also to be complimented for making the most of such splendid opportunities to further educate the public and increase the good-will of this same public toward our great industry.

# Hotel Rates

For the information of our membership we give below the Hotel Rates. Reservations should be made direct to the hotels.

A—AMERICAN PLAN
E—EUROPEAN PLAN

| | | RATES BY THE DAY | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Rooms without Private Bath | | | | Rooms with Private Bath | | | |
| | | For One Person | | For Two Persons | | For One Person | | For Two Persons | |
| | | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum |
| **BEACH FRONT HOTELS** | | | | | | | | | |
| Boardwalk | A—Royal Palace | 6.00 | 8.00 | 10.00 | 14.00 | 9.00 | 12.00 | 16.00 | 20.00 |
| | A—Breakers | 6.50 | 9.00 | 12.00 | 16.00 | 9.00 | 14.00 | 15.00 | 24.00 |
| | E—Breakers | 2.50 | 5.00 | 4.00 | 8.00 | 5.00 | 8.00 | 7.00 | 16.00 |
| | A—St. Charles | 6.00 | 7.00 | 13.00 | 14.00 | 9.00 | 12.00 | 15.00 | 20.00 |
| | A—Gerstel's Jerome | 5.00 | 7.00 | 10.00 | 13.00 | 7.00 | 9.00 | 13.00 | 16.00 |
| | E—Gerstel's Jerome | 2.00 | 3.50 | 5.00 | 7.00 | 3.50 | 6.00 | 7.00 | 8.00 |
| | A—Seaside | 6.00 | 8.00 | 11.00 | 12.00 | 8.00 | 10.00 | 12.00 | 20.00 |
| | A—Strand | 5.00 | 7.00 | 10.00 | 10.00 | 6.00 | 10.00 | 11.00 | 14.00 |
| | A—Chalfonte-Haddon Hall | 6.00 | 8.00 | 12.00 | 14.00 | 10.00 | —— | 14.00 | 20.00 |
| | E—New Belmont | 2.00 | 3.00 | 3.00 | 5.00 | 5.00 | 5.00 | 6.00 | 6.00 |
| | E—Schiltz | 2.00 | 3.50 | 3.50 | 6.50 | 3.50 | 5.50 | 5.50 | 8.50 |
| | A—Traymore | 8.00 | 9.00 | 14.00 | 14.00 | 10.00 | 21.00 | 16.00 | 28.00 |
| | E—Traymore | 4.00 | 5.00 | 6.00 | 6.00 | 6.00 | 16.00 | 8.00 | 18.00 |
| | A—Brighton | 8.00 | 10.00 | 15.00 | 18.00 | 10.00 | 13.00 | 17.00 | 22.00 |
| | A—Marlborough-Blenheim | 8.00 | 9.00 | 14.00 | 15.00 | 10.00 | 14.00 | 15.00 | 25.00 |
| | E—Marlborough-Blenheim | 5.00 | 6.00 | 7.00 | 8.00 | 7.00 | 11.00 | 8.00 | 18.00 |
| | A—Dennis | 6.00 | 9.00 | 12.00 | 14.00 | 9.00 | 11.00 | 14.00 | 22.00 |
| | E—Shelburne | 3.00 | 4.00 | 5.00 | 6.00 | 4.00 | 12.00 | 7.00 | 12.00 |
| | A—Ritz-Carlton | —— | —— | —— | —— | 11.00 | 14.00 | 19.00 | 24.00 |
| | E—Ritz-Carlton | —— | —— | —— | —— | 5.00 | 8.00 | 7.00 | 12.00 |
| | A—Chelsea | 8.00 | 10.00 | 14.00 | 16.00 | 10.00 | 14.00 | 16.00 | 20.00 |
| **AVENUE HOTELS** | | | | | | | | | |
| Massachusetts Avenue | A—Gerstel's Leland | 6.00 | 7.00 | 11.00 | 12.00 | 7.00 | 8.00 | 13.00 | 14.00 |
| | E—Gerstel's Leland | 3.00 | 4.00 | 5.00 | 6.00 | —— | —— | 7.00 | 8.50 |
| | E—Thurber | 1.50 | 2.00 | 3.00 | 3.00 | —— | —— | —— | —— |
| New Jersey Ave. | A—Grossman's | 6.50 | 7.00 | 10.00 | 12.00 | 7.50 | 9.00 | 14.00 | 16.00 |
| St. Charles Place | A—Loraine | 5.00 | 6.00 | 10.00 | 12.00 | 7.00 | 8.00 | 12.00 | 14.00 |
| | A—Raleigh | 5.00 | 6.00 | 10.00 | 12.00 | 6.00 | 7.00 | 12.00 | 14.00 |
| | E—Raleigh | 2.00 | 3.00 | 3.00 | 5.00 | 4.00 | 6.00 | 6.00 | 8.00 |
| Virginia Ave. | A—Calvert | 3.00 | 4.00 | 6.00 | 7.00 | 4.00 | 5.00 | 7.00 | 9.00 |
| | E—Calvert | 2.00 | 2.50 | 3.00 | 4.00 | 3.00 | 4.00 | 4.00 | 5.00 |
| | A—Bothwell | 4.00 | 5.00 | 8.00 | 9.00 | 6.00 | 7.00 | 10.00 | 12.00 |
| | E—Bothwell | 2.00 | 4.00 | 4.00 | 6.00 | 3.50 | 4.00 | 6.00 | 7.00 |
| | A—Wiltshire | 4.00 | 6.00 | 8.00 | 10.00 | 6.00 | 8.00 | 10.00 | 14.00 |
| | E—Wiltshire | 2.00 | 3.00 | 4.00 | 5.00 | 4.00 | 4.00 | 5.00 | 7.00 |
| | E—Sothern | —— | 1.50 | —— | 3.00 | —— | —— | —— | 4.00 |
| | A—Morton | 4.50 | 5.00 | 9.00 | 10.00 | 6.00 | 7.00 | 11.00 | 12.00 |
| | E—Morton | 2.00 | 2.50 | 3.00 | 4.00 | 3.50 | 4.00 | 5.00 | 6.00 |
| | A—Clarendon | 4.00 | 5.00 | 8.00 | 10.00 | 6.00 | 7.00 | 10.00 | 14.00 |
| | E—Clarendon | 2.00 | 3.00 | 4.00 | 5.00 | 3.50 | 4.00 | 5.00 | 7.00 |
| | A—Albemarle | 3.50 | 4.50 | 7.00 | 8.00 | 4.50 | 5.00 | 8.00 | 10.00 |
| | E—Albemarle | 1.50 | 2.00 | 3.00 | 4.00 | 2.50 | 3.00 | 4.00 | 5.00 |
| Penna. Ave. | A—St. Clare | 4.00 | 5.00 | 8.00 | 9.00 | —— | —— | 10.00 | 11.00 |
| South Carolina Avenue | A—Warwick | 4.00 | 5.00 | 7.00 | 8.00 | 5.00 | 6.00 | 8.00 | 10.00 |
| | A—New England | 4.50 | 5.50 | 8.00 | 10.00 | —— | —— | 11.00 | 12.00 |
| | A—Watkins | 4.00 | —— | 7.00 | —— | 5.00 | —— | 8.00 | —— |
| | E—Watkins | 2.00 | —— | 3.00 | —— | 2.50 | —— | 4.00 | —— |
| | A—Radnor | 2.00 | 2.50 | 4.00 | 5.00 | —— | —— | —— | —— |
| | E—Radnor | 1.50 | 1.50 | 2.00 | 3.00 | —— | —— | —— | —— |
| | A—Mullica | 3.00 | 3.50 | 6.00 | 7.00 | —— | —— | —— | —— |
| | A—Trexler | 3.50 | 4.00 | 6.00 | 8.00 | 5.00 | 6.00 | 10.00 | 12.00 |
| | E—Iroquois | 2.00 | 4.00 | 3.00 | 5.00 | 3.00 | 5.00 | 5.00 | 7.00 |
| | E—Windsor | 3.00 | 4.00 | 6.00 | 7.00 | 3.50 | 4.50 | 7.00 | 9.00 |
| Ocean Ave. | A—Bon Air | 3.75 | 4.00 | 7.00 | 8.00 | —— | —— | —— | —— |
| | E—Bon Air | 1.25 | 2.00 | 2.50 | 3.50 | —— | —— | —— | —— |
| Tennessee Ave. | E—Elberon | 2.00 | 4.00 | 3.00 | 5.00 | 3.00 | 5.00 | 5.00 | 7.00 |
| | A—Continental | 4.00 | 5.00 | 8.00 | 9.00 | 6.00 | —— | 10.00 | 12.00 |
| | E—Continental | 2.00 | 2.50 | 4.00 | 5.00 | 3.50 | 4.00 | 7.00 | 8.00 |
| | E—Fredonia | 2.00 | 2.50 | 3.00 | 4.00 | 2.50 | 3.50 | 4.00 | 6.00 |
| St. James Place | A—Flanders | 3.50 | 4.50 | 7.00 | 9.00 | 4.50 | 5.00 | 9.00 | 10.00 |
| | A—Elwood | 3.50 | 4.50 | 7.00 | 9.00 | 5.00 | —— | 10.00 | —— |
| | E—Elwood | 1.00 | 2.00 | 3.00 | 4.00 | 3.00 | —— | 5.00 | —— |
| | A—Waldorf | 3.00 | —— | 6.00 | —— | —— | —— | —— | —— |
| | E—Waldorf | 1.50 | —— | 3.00 | —— | —— | —— | —— | —— |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| New York Ave. | A—New Holland | 4.50 | 5.50 | 7.00 | 9.00 | 6.00 | 7.00 | 9.50 | 11.00 |
| | E—New Holland | 3.00 | 4.00 | 4.00 | 6.00 | 4.50 | 5.50 | 6.50 | 8.00 |
| Kentucky Ave. | A—New Clarion | 4.00 | 5.00 | 8.00 | 9.00 | 6.00 | 7.00 | 10.00 | 12.00 |
| | A—De Ville | 4.00 | 4.00 | 8.00 | 8.00 | —— | —— | 10.00 | 12.00 |
| | A—Monticello | 4.00 | 4.50 | 7.00 | 9.00 | 6.00 | 7.00 | 10.00 | 12.00 |
| | E—Monticello | 2.00 | 3.00 | 4.00 | 5.00 | —— | —— | 6.00 | 7.00 |
| | A—Boscobel | 5.00 | 5.00 | 8.00 | 10.00 | —— | —— | 10.00 | 14.00 |
| | A—Healey's | 3.50 | 4.00 | 6.00 | 7.00 | 5.00 | —— | 8.00 | —— |
| | E—Healey's | 1.50 | 3.00 | 3.00 | 6.00 | 3.00 | —— | 6.00 | —— |
| | A—Kentucky | 3.50 | 4.00 | 7.00 | 9.00 | 5.00 | 6.50 | 9.00 | 10.00 |
| | E—Kentucky | 1.50 | 2.00 | 3.00 | 5.00 | 3.50 | 5.00 | 8.00 | 9.00 |
| | A—Wellsboro | 4.00 | 5.00 | 7.00 | 10.00 | 6.00 | 7.00 | 12.00 | 14.00 |
| | E—Wellsboro | 1.50 | 2.00 | 3.00 | 4.00 | 3.00 | 4.00 | 6.00 | 8.00 |
| | A—Westminster | 3.00 | 3.50 | 6.00 | 7.00 | 4.50 | 5.00 | 9.00 | 10.00 |
| | E—Westminster | 1.50 | 2.00 | 3.00 | 4.00 | 3.00 | 4.00 | 5.00 | 7.00 |
| | A—Normandie | 4.00 | —— | 8.00 | —— | —— | —— | —— | —— |
| | A—Richmond | 4.00 | 4.50 | 8.00 | 9.00 | 5.00 | 6.00 | 10.00 | 11.00 |
| | E—Richmond | 2.00 | 3.00 | 4.00 | 5.00 | —— | —— | —— | —— |
| | A—Silverton | 3.50 | 6.00 | 6.00 | 10.00 | 5.00 | 7.00 | 8.00 | 12.00 |
| | E—Silverton | 1.50 | 3.00 | 2.00 | 4.00 | 2.50 | 4.00 | 4.00 | 6.00 |
| | A—Sterling | 5.00 | 6.00 | 9.00 | 10.00 | 6.00 | 7.00 | 12.00 | 14.00 |
| Illinois Ave. | A—Craig Hall | 4.50 | 5.50 | 7.50 | 8.50 | 5.50 | 6.50 | 9.50 | 10.00 |
| Park Place | A—Glaslyn-Chatham | 4.00 | 4.00 | 8.00 | 8.00 | 6.00 | 6.00 | 10.00 | 10.00 |
| | A—Cheltenham-Revere | 3.50 | 4.50 | 7.00 | 9.00 | 5.00 | 6.00 | 10.00 | 12.00 |
| | A—Runnymede | 5.00 | 5.00 | 10.00 | 10.00 | —— | —— | 12.00 | 14.00 |
| | E—Runnymede | 1.50 | 2.00 | 2.50 | 3.00 | —— | —— | —— | —— |
| Michigan Ave. | A—Pennhurst | 3.50 | 4.00 | 7.00 | 8.00 | 5.00 | 6.00 | 10.00 | 12.00 |
| | A—Arlington | 3.00 | 5.00 | 6.00 | 8.00 | 5.00 | 6.00 | 10.00 | 12.00 |
| | A—Emmett | 2.50 | 3.00 | 5.00 | 6.00 | —— | —— | —— | —— |
| | E—Emmett | 1.00 | 1.50 | 2.00 | 3.00 | —— | —— | —— | —— |
| Arkansas Ave. | A—Lexington | 4.00 | 6.00 | 6.00 | 10.00 | 6.00 | 8.00 | 9.00 | 12.00 |
| | E—Lexington | 1.50 | 3.00 | 2.00 | 5.00 | 4.00 | 6.00 | 5.00 | 8.00 |
| | A—Osborne | 3.00 | 4.50 | 6.00 | 9.00 | 4.50 | 5.50 | 9.00 | 10.00 |
| | E—Osborne | 1.50 | 2.50 | 3.00 | 4.50 | 3.00 | 3.50 | 5.50 | 6.00 |
| Missouri Ave. | A—Worthington | 3.00 | 4.50 | 6.00 | 9.00 | 5.00 | 6.00 | 10.00 | 12.00 |
| | E—Worthington | 1.50 | 2.00 | 3.00 | 4.00 | —— | —— | 5.00 | 6.00 |
| Pacific Ave. | A—Plaza | 4.50 | 5.00 | 9.00 | 10.00 | 6.00 | 7.00 | 11.00 | 12.00 |
| | A—Mt. Vernon | 3.50 | 4.00 | 6.00 | 7.00 | 6.00 | —— | 10.00 | 12.00 |
| | E—Mt. Vernon | 1.50 | 2.00 | 3.00 | 4.00 | 2.50 | 3.00 | 5.00 | 6.00 |
| | A—Austine | 3.50 | 4.00 | 7.00 | 8.00 | —— | —— | —— | —— |
| | A—Arondale | 3.00 | 4.00 | 6.00 | 8.00 | —— | —— | —— | —— |
| | E—Arondale | 1.50 | 2.00 | 3.00 | 4.00 | —— | —— | —— | —— |
| | A—Eastbourne | 4.00 | 5.00 | 8.00 | 9.00 | 7.00 | 8.00 | 10.00 | 12.00 |


# Merchandise Billing

**Don't forget to visit the Accounting Section Booths**

**A GAS COMPANY OPERATOR WILL**
**DEMONSTRATE FOR YOU**
**THE LATEST TIME AND MONEY-SAVING SYSTEMS**
**of**
**MERCHANDISE BILLING**

**Every Day, 9:00 a. m. to 6:00 p. m.**
**A. G. A. Annual Convention and Exhibition, Atlantic City,**
**October 15-19, 1923**

# Associations Affiliated with A. G. A.

**Canadian Gas Association**
Date of Affiliation—Mar. 25, 1919
Pres.—Col. D. R. Street, Ottawa Gas Co., Ottawa, Ont., Can.
Acting Sec.-Tr.—E. A. Hills, 17 Toronto St., Toronto.
Conv., 1924.

**Empire State Gas and Electric Association**
Date of Affiliation—Nov. 21, 1919
Pres.—M. J. Brayton, Utica Gas & Electric Co., Utica, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.
Annual Meeting, Lake Placid Club, Lake Placid, N. Y., Oct. 8, 9, 1923.

**Illinois Gas Association**
Date of Affiliation—Mar. 19, 1919
Pres.—Robert B. MacDonald, Peoples Power Co., Moline, Ill.
Sec.-Tr.—R. V. Prather, 305 Illinois Mine Workers Bldg., Springfield, Ill.
Conv., 1924.

**Indiana Gas Association**
Date of Affiliation—April 24, 1919
Pres.—L. Fitzgerald, Gary Heat, Light & Water Co., Gary, Ind.
Sec.-Tr.—E. J. Burke, Citizens Gas Co., Indianapolis, Ind.
Conv., 1924.

**Iowa District Gas Association**
Date of Affiliation—May 21, 1919
Pres.—Charles Smith, Yankton Light & Heating Co., Yankton, S. D.
Sec.-Tr.—H. R. Sterrett, 551 Seventh St., Des Moines, Ia.
Conv., 1924.

**Michigan Gas Association**
Date of Affiliation—Sept. 18, 1919
Pres.—Fred W. Seymour, Battle Creek Gas Co., Battle Creek, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., Hotel Pantlind, Grand Rapids, Mich., Sept. 19-20.

**Missouri Association of Public Utilities**
Date of Affiliation—June 18, 1920
Pres.—H. C. Blackwell, 1330 Grand Ave., Kansas City, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Wiley F. Corl, Chmn. Affiliation Com., Missouri Utilities Co., Mexico, Mo.
Conv., 1924.

**New England Association of Gas Engineers**
Date of Affiliation—Feb. 19, 1919
Pres.—C. E. Paige, C. H. Tenney & Co., Boston, Mass.
Sec.-Tr.—J. L. Tudbury, 247 Essex St., Salem, Mass.
Conv., Boston, 1924.

**Gas Sales Association of New England**
Date of Affiliation—Oct. 1, 1919
Gov.—F. A. Woodhead, 689 Massachusetts Ave., Arlington, Mass.
Sec.—M. Bernard Webber, 150 Congress St., Boston, Mass.
Annual Meeting, 1924.

**New Jersey Gas Association**
Date of Affiliation—April 25, 1919
Pres.—James P. Hanlan, Public Service Gas Co., Newark, N. J.
Sec.-Tr.—R. A. Koehler, Public Service Gas Co., Newark, N. J.
Conv., 1924.

**Pacific Coast Gas Association**
Date of Affiliation—Sept. 18, 1919
Pres.—F. S. Wade, Southern Counties Gas Co., Los Angeles, Cal.
Sec.-Tr.—W. M. Henderson, 812 Howard St., San Francisco, Cal.
Conv., Del Monte, Cal., Sept. 11-14.

**Pennsylvania Gas Association**
Date of Affiliation—April 10, 1919
Pres.—Grier Hersh, York Gas Co., York, Pa.
Sec.-Tr.—Geo. L. Cullen, Harrisburg Gas Co., Harrisburg, Pa.
Conv., 1924.

**South Central Gas Association**
Date of Affiliation—Oct. 15, 1919
Pres.—F. C. Armbruster, Southwestern Gas & Electric Co., Shreveport, La.
Sec.-Tr.—S. J. Ballinger, San Antonio Public Service Co., San Antonio, Texas.
Conv., 1924.

**Southern Gas Association**
Date of Affiliation—May 20, 1919
Pres.—E. L. Richa, 1602 Lexington Bldg., Baltimore, Md.
Sec.-Tr.—E. D. Brewer, 75 North Mayson Ave., Atlanta, Ga.
Conv., 1924.

**Wisconsin Utilities Association**
Date of Affiliation—March 25, 1919.
Pres.—Harold L. Geisse, Wisconsin Valley Electric Co., Wausau, Wis.
Exec.-Sec.—J. N. Cadby, 445 Washington Bldg., Madison, Wis.
Conv., 1924.

# Geographic Divisions

**Eastern States Gas Conference**
Date of Formation—April 11, 1923
Pres.—P. H. Gadsden, The United Gas Improvement Co., Philadelphia, Pa.
Sec.-Tr.—L. R. Dutton, Philadelphia Suburban Gas & Electric Co., Jenkintown, Pa.
Conv., 1924.

## ACCOUNTING SECTION

J. W. HEINS, Chairman — W. A. SAUER, Vice-Chairman

H. W. HARTMAN, Secretary

### MANAGING COMMITTEE—1923

ARMSTRONG, J. J., Toronto, Can. (Canadian)
BARKER, W. S., Newark, N. J.
BISSELL, J. H., Boston, Mass.
BRINE, F. A., Atlanta, Ga.
CASSELL, W. H., Baltimore, Md.
CLINTON, DEWITT, Worcester, Mass. (N. E. Gas Eng.)
DAVIDSON, H. C., New York, N. Y.
DEAL, E. C., Springfield, Mo. (Missouri)
DOERING, W. A., Boston, Mass.
FENNIMAN, J. R., New York, N. Y.
GOODNOW, A. C., Jacksonville, Fla. (Southern)
HAASE, EWALD, Milwaukee, Wis. (Wisconsin)
HALL, I. S., Boston, Mass.
HODGES, E. W., San Francisco, Cal. (Pacific Coast)
HOFFMAN, F. C., St. Paul, Minn.
JAMES, F. M., Aurora, Ill. (Illinois)
JEFFREY, JOS., Scranton, Pa.
KURTZ, ADAM, Detroit, Mich. (Michigan)
LAWALL, H. J., Philadelphia, Pa.
LAWRENCE, JAMES, New York, N. Y.
LYNCH, B. W., Chicago, Ill.
MCCABE, J. B., Dallas, Texas (South Central)
METERS, W. J., New York, N. Y.
MURFIT, W. G., Newton, Pa.
PATTERSON, F. H., Rochester, N. Y.
PETTES, W. H., Newark, N. J. (New Jersey)
PHILLIPS, R. E., Lincoln, Neb. (Iowa)
PORTER, EDWARD, Philadelphia, Pa. (Pennsylvania)
POTTER, O. F., Newark, N. J.
RASTENBURG, F. G., Indianapolis, Ind.
REESE, J. G., Baltimore, Md.
SCHMIDT, JR., WM., Baltimore, Md.
SCOBELL, E. C., Rochester, N. Y. (Empire State G. & E.)
SCOTT, J. M., Wilmington, Del.
SHEARON, B. P., Hammond, Ind. (Indiana)
SHORT, A. F., Providence, R. I.
TOSSELL, A. L., Chicago, Ill.
WILBUR, A. A., Brockton, Mass. (Gas Sales of N. E.)
WINTERS, A. C., Chicago, Ill.

### CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

**Budget**—F. H. PATTERSON, Rochester, N. Y.
**Customers Accounting**—W. A. DOERING, Boston, Mass.
**Fixed Capital Records**—H. J. LAWALL, Philadelphia, Pa.
**Insurance**—J. G. REESE, Baltimore, Md.
**Nominating**—EWALD HAASE, Milwaukee, Wis.
**Relations with Customers**—A. L. TOSSELL, Chicago, Ill.
**State Representatives and Contributions to Monthly**—JAMES LAWRENCE, New York, N. Y.
**Uniform Classification of Accounts**—W. J. METERS, New York, N. Y.


# Operating Budget

EDWARD PORTER, The United Gas Improvement Company, Philadelphia, Pa.

THE OPERATING BUDGET SYSTEM as outlined herein is intended primarily for the so-called small company, as the larger companies usually have budget systems in operation.

An operating budget should include the earnings, operating expenses, and income deductions.

In most companies, the manager with his immediate assistants would be best fitted to prepare the budget; the New Business Department giving assistance concerning sales, earnings, and costs of new business; the Engineering Department giving assistance as to production and distribution costs, additional plant capacity and extensions required; the Accounting Department giving assistance on commercial and general expense costs, non-operating revenue and fixed charges, and bringing the component parts together into a completed budget.

It is, of course, necessary to outline some definite program preliminary to compiling the budget, and the first step usually taken is to have the New Business Department prepare an estimate of the sales and revenue, which should give the sales in cubic feet by classes and revenue in dollars by classes; likewise an estimate of the increase in meters and services, which may be added to the company's system.

With the completion of the estimate of

the sales by the New Business Department, it should be turned over to the Engineering Department to estimate upon Production and Distribution costs.

Concurrent with this estimate, the Engineering Department should prepare a Budget for construction, covering the Plant and Distribution system, which, when finally decided upon, forms the basis for estimating the amount of new capital required and for determining the amount of additional interest charges, which latter item is referred to later.

The balance of the operating costs, other than New Business costs, which should be prepared by the New Business Department, should be prepared by the Accounting Department.

As all utilities follow some form of classification of accounts, this should be the base on which to project the budget, and the Classification of Accounts of the American Gas Association is used as a guide herein.

Operating budgets are generally made to cover a year, beginning January 1st and ending December 31st; and are usually prepared in the latter part of the year preceding the budget year.

There should be shown on the Budget the complete year's operating costs of the previous year; the current period operating costs up to the date the budget is being compiled, and the current month's operating costs.

These costs should be shown in two ways, that is, the costs in dollars and in cents per thousand cubic feet for each account.

A blank form, printed and ruled, showing the accounts usually kept, should be used. Four small columns and four larger columns should be ruled off; the first to show the cost per M cubic feet, and the second to show the dollars. In the first column in each case should be inserted the costs for the preceding year. In the second column in each case should be inserted the costs for the number of months of the present year up to the time the budget is being compiled for the next year. In the third column in each case should be inserted the costs for the current month's operations. In the fourth column in each case should be inserted the estimated costs for the budget year.

*Operating Revenue*

The estimate of operating revenue representing revenue from the sales of gas, is best determined by the New Business Department, if such a department is a part of the organization, and in the absence of such a department, by the individuals in closest contact with business conditions in the community served and with the prospects of the growth of the company's service.

It is well to show the revenue to be obtained by classes, as called for by the classification of accounts; or if so desired, by classes of consumers, such as residential, industrial, municipal sales, street lighting and sales to other utilities.

In the preparation of this estimate, the customers already attached to the company's system and additional customers to be obtained, should be considered.

As a guide in testing the estimate, the consumption per meter or the consumption per capita, should be computed, or these factors may be used as an aid in building up the estimate.

When the estimated sales in cubic feet have been determined, the revenue in dollars should then be calculated, based upon the rates established in the rate schedule.

*Non-Operating Revenue*

The items to be included under this caption are usually familiar to the Ac-

counting Department, and are generally best prepared by it.

*Production Costs*

The accounts for carburetted water gas production are as follows:

Production Supervision
Boiler House Labor
Generator House Labor
Purification Labor
General Labor
Boiler Fuel
Generator Fuel
Oil—Water Gas
Purification Supplies
Water
Production Supplies and Expenses
Maintenance Buildings
Maintenance Apparatus
Residuals

*Production Supervision*

Unless there are some changes in salaries, consulting engineers' expenses, or other items, there should be very little change in the total cost of this item for the Budget year, and a similar cost in dollars for this item should be placed in the Budget year, and this cost then divided by the estimated make to secure the cost per M of gas made.

*Boiler House Labor*

Unless the plant is large—and even in that event, for a small normal increase in make, with no increase in wages, the total expenditure for this item should approximate the same from year to year. An inspection of the three columns tabulated should make it possible to estimate closely the total amount for the Budget year, after which the cost per M can be worked out and filled in.

*Generator House Labor*

If the make is estimated to increase, and there are no increases in rates for labor, the increased amount of gas can, to a certain extent, be made without any increase in total cost for labor, except possibly the extra cost of the gas maker and helper. This total cost, therefore, can be estimated and divided by the amount of gas made, and the per M figure obtained, which, if too low, can be increased, and the total cost increased accordingly for the Budget year.

*Purification Labor*

The tendency will be, other conditions being equal, that the cost per M of gas made will be about the same as it has been running in the past. An inspection of the costs already tabulated should be made, after which the estimated cost per M can be put in and the total cost in dollars for the Budget year estimated in accordance with the estimated make.

*General Labor*

This item is likely to be variable. If considerable construction and alterations to the plant have taken place during the past year, and a considerable amount of cleaning up and other work has been done, it may be found that the costs of that year can be reduced for the Budget year. The total cost of general labor should approximate the same each year, regardless of the usual normal increase in make. Inspection of the figures should show the total cost to be put in the Budget year, after which the cost per M can also be worked out and inserted.

*Boiler Fuel*

At the end of the columns, there should be filled in the amount of boiler fuel used per M, and its cost per ton, including any handling or storage charges. After securing from the Purchasing Agent, or from such other sources as may be available, the estimated price for the fuel to be used during the Budget year, an inspection of the past results obtained should make it possible to fill in

the estimated amount of fuel that will be used per M of gas made, and with the estimated cost per ton of fuel, the estimated cost per M of gas made can be inserted in the Budget year, after which the total cost in dollars for the Budget year can be filled in.

*Generator Fuel*

At the end of the columns, there should be filled in the amount of generator fuel used per M, and its cost per ton, including any handling or storage charges. After securing from the Purchasing Agent, or from such other sources as may be available, the estimated price for the fuel to be used during the Budget year, an inspection of the past results obtained should make it possible to fill in the estimated amount of fuel that will be used per M of gas made, and with the estimated cost per ton of fuel, the estimated cost per M of gas made can be inserted in the Budget year, after which the total cost in dollars for the Budget year can be filled in.

*Oil-Water Gas*

At the end of the columns, there should be filled in the amount of oil used per M, and its cost per gallon, including any handling or storage charges. After securing from the Purchasing Agent, or from such other sources as may be available, the estimated price for the oil to be used during the Budget year, an inspection of the past results obtained should make it possible to fill in the estimated amount of oil that will be used per M of gas made, and with the estimated cost per gallon of oil, the estimated cost per M of gas made can be inserted in the Budget year, after which the total cost in dollars for the Budget year can be filled in.

*Purification Supplies*

It is assumed that the purification stock will be changed in operating from time to time, based on experience as to the work done by the oxide. Under these circumstances, this cost should run fairly uniform per M of gas made. Then, an inspection of the cost figures in the first three columns will determine the cost to be placed in the Budget year for this item.

*Water*

This item should run fairly uniform in cost per M of gas made, and an inspection of the actual cost columns will determine the cost to be entered in the Budget year.

*Production Supplies and Expenses*

Unless there are some extraordinary items, these costs should run fairly uniform per M of gas made, and an inspection of the actual costs will determine the costs to be entered in the Budget year.

*Maintenance Buildings and Maintenance Apparatus*

The maintenance items will vary considerably from year to year, depending upon the condition of the plant, and on how well the plant maintenance has been kept up in the past. An inspection of the columns showing present and past costs, and a careful survey of what the probable large expenditures will be for the Budget year, will determine the figures to be entered in the Budget year.

It is assumed in making these estimates, the possibilities of reductions in costs will be considered, and these reductions included wherever they are possible or probable. This is also true of increased costs, such as large maintenance items, due to rebuilding and remodeling.

*Residuals*

The only residual for credit in the manufacture of water gas is usually the tar made, which may be used for boiler fuel, or sold. An inspection of the columns of cost figures, showing the present and past credits, and bearing in mind the probable use or sale during the Budget year will determine the credit to be entered in the Budget year for this item.

*Production Costs for Coal Gas*

If coal gas is manufactured in addition to water gas, then the estimated make will have to be divided in two, one for water gas and the other for coal gas, the amounts depending on the size of the coal gas plant and the economy of operation or manufacture of the two kinds of gases under the conditions contemplated for the Budget year. Having made this division, the water gas estimate can be made as has been indicated.

The coal gas estimate of production costs can be made in a similar manner to the production costs for water gas, except that care will have to be exercised in estimating the residual credit for by-products, as well as to estimate as accurately as possible the cost of gas coal.

After making the two separate estimates of costs, they can be combined, and the total production costs obtained.

*Distribution Costs*

The following are the accounts for Distribution:

Distribution Supervision
Distribution Office Expense
Service Expense
Consumers' Premises Expense
Distribution Pumping
Maintenance of Mains
Maintenance of Services
Maintenance of Meters
Reset and Removed Meters

The costs for Distribution should run more uniformly than for Production.

The estimate of costs to be entered in the Budget year will have to be based principally on inspection of the past and present operating costs, estimating either the dollar column first, or the per M column, as may be found advisable, and whichever runs the most uniform.

If there are any extraordinary expenses, such as a consumers' inspection campaign, extensive paving program requiring overhauling of mains and services, or considerable overhauling of meters, due to repairs having accumulated, increases in these items will have to be provided in accordance with what seems probable for the Budget year. If, however, during the past and present these items have been running high, due to this work having been kept up, the future costs of these items will decrease materially.

With three periods available, it is sometimes helpful to check the total yearly costs for the Budget year by dividing the current period's costs by the number of months, and multiplying this result by 12, and also by multiplying by 12, the last month's operating cost, especially for figures that should run fairly uniform, such as the labor items, supplies and expenses, etc.

*New Business Costs*

The accounts appearing under this heading are as follows:

Promotion Supervision
Promotion Supplies and Expenses
Advertising
Soliciting
Appliance Demonstration

As these costs are determined largely by the company's policy, it should be pos-

sible after inspecting the costs for the previous year and the current period, to decide upon the amount which will be expended during the Budget year. If the company contemplates an extensive advertising campaign and an intensive sales campaign, it will be possible to approximate the cost of any such activities, as the cost of the newspaper advertising can readily be obtained from the newspapers and a sales campaign can be estimated.

*Commercial Costs*

The accounts under this heading are:

Commercial Salaries
Collection Expenses
Meter Reading
Office Expense

After reviewing the costs for the past and present periods, some idea will be obtained of how these costs are going, and in estimating for the Budget year, consideration should be given to any prospective additions to the force, any increases in salaries that may be contemplated, and any increases or decreases in connection with the expense of operating the commercial office, such as office rent, stationery, books, office accessories, etc.

Consideration must be given to any unusual expenses that may have been incurred in the prior periods, and if they are not usual or normal, they should be eliminated in the Budget year. Under ordinary circumstances, the cost per thousand or the cost per meter may be used as a guide, but these factors should be checked with the dollar costs as well, and if the amount is insufficient or too much, it should be corrected to agree with the conditions anticipated in the Budget year.

*General Costs*

The accounts under this heading are:

General Salaries
General Expense
Legal Expenses
Insurance
Injuries and Damages
Uncollectible Gas Bills

The plan outlined under the heading of "Commercial Costs" will apply to "General Costs."

However, particular care should be exercised in estimating the amount applying to "General Expense," this account being more or less of a "catch all" for any expenditures which cannot be directly allocated to some particular account. Inquiries should be made to ascertain if any unusual expenditures are to be made, and which should be provided for, so that they may be included in this account, or to eliminate any unusual charges which will not have to be met during the Budget year.

It is usually a general custom with respect to the amount to be charged off for uncollectible bills, to gauge this upon past experience; a basis reflected in a certain percentage of the operating revenue or cents per thousand cubic feet, may also be used as a guide.

Accident and Damages are likewise based upon experience and the estimate for this account may be made on the basis of a certain percentage of the Operating Revenue or cents per thousand cubic feet.

The estimate for "Insurance" should be based upon the experience of the past, taking into consideration any increases or decreases in the amount of insurance to be carried, and any changes in the premium rate.

The estimate for "Legal Expenses" should be based upon the amount of actual retainers paid at the time the budget is prepared, and any anticipated ex-

penses that may have to be provided for.

*Taxes*

The estimate for Taxes, covering as it does state, city and government taxes, should be prepared by basing the estimate upon the knowledge of the Company's assessment in the past, the rate and contemplated changes in any of these factors. It is well to show Taxes by classes to insure that none of the various taxes have been overlooked.

*Renewals and Replacements*

The amount taken up in Operating Expenses for this account will be governed by the policy or requirements of the individual companies.

*Income Deductions*

The present outstanding obligations, both funded and unfunded, should be set forth in detail and the interest thereon calculated. Using this result as a base, the interest on any new money which may be put into the property, whether through the issue of securities or through loans, should be calculated from the estimated dates that interest will accrue.

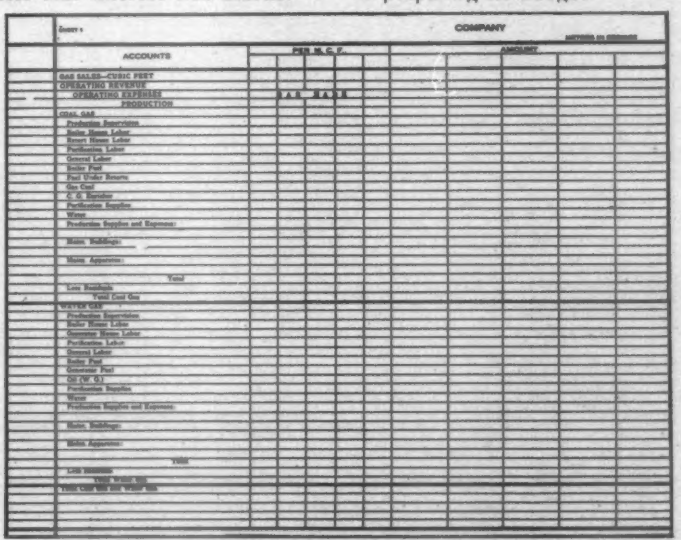
These dates are usually obtained from the report covering the construction program which should state the periods during the Budget year when funds for construction purposes will be required.

Allowance should be made for such portion of construction requirements as may be financed from excess cash on hand, from estimated excess net income and from such charges in the Budget as do not require cash outlay such as Reserves, Suspense Accounts, etc.

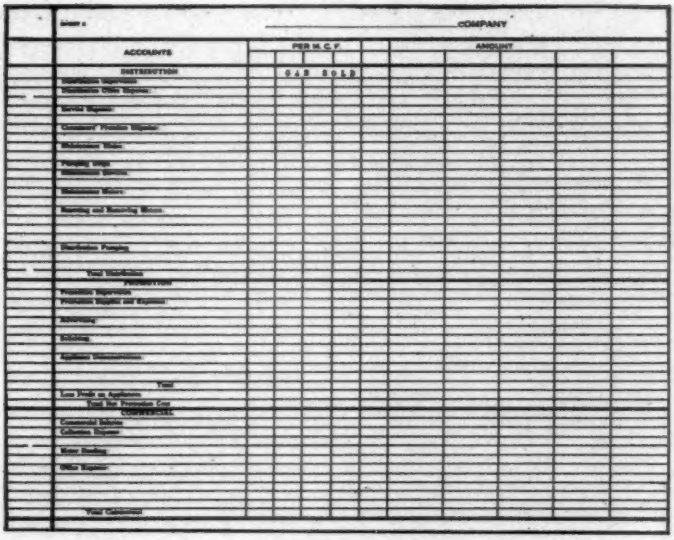
Other income deductions, such as Rental of Leased Plants, Bond Discount and Expense, and similar items, if any, should be listed and given the proper consideration for the Budget year.

*Forms*

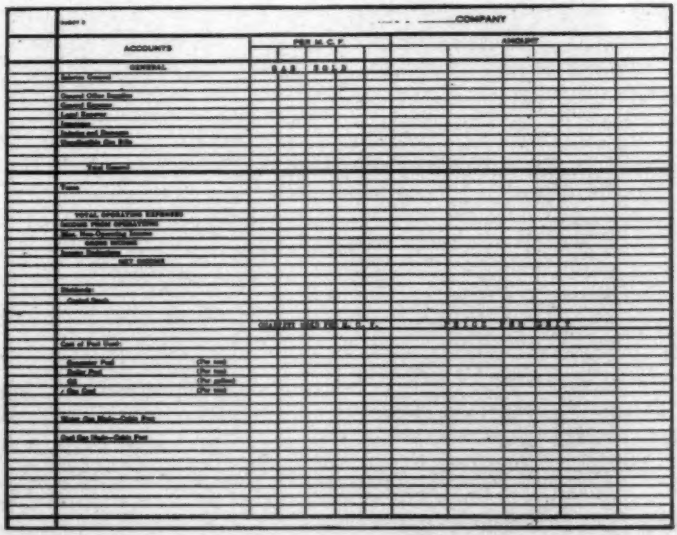
Forms F, G and H are included herein as a guide. Necessarily, any forms cannot be final, and that used in connection with the Operating Budget is a suggestion and can be built up in accordance with the requirements of each company in preparing its budget.




**Form F—Actual Size 12" x 9½"**



Form G—Actual Size 12" x 9½"



Form H—Actual Size 12" 9½"

# Report of Sub-committee on Bookkeeping Without Books

W. H. CASSELL, Chairman, Consolidated Gas, Electric Light & Power Company, Baltimore, Md.

THE SUB-COMMITTEE on Bookkeeping Without Books met in Baltimore on Wednesday, April 25th, those present being W. H. Cassell, Chairman, T. R. Clayton, H. Frey, A. R. Keller, and W. A. Doering, Chairman of the Committee on Customers' Accounting.

After a general discussion of the duties of the Committee as outlined in the minutes of the meeting of the General Committee held in New York on December 20th, it was decided to send a brief questionnaire to the companies known to the Committee to have adopted some form of Bookkeeping Without Books. No attempt was made to secure any information as to "actual saving affected as compared with system formerly in use," but inquiry was made as to: (a) Difficulties, if any, experienced in its introduction or operation; (b) Any modifications introduced in the original system as it is applied in Baltimore because of such difficulties, or to take care of special local conditions. Letters were sent to the following companies:

Allentown-Bethlehem Gas Co., Allentown, Pa.
United Gas Improvement Co., (Philadelphia Gas Works) Philadelphia, Pa.
Nashville Gas & Heating Co., Nashville, Tenn.
Consumers Gas Co., Reading, Pa.
Harrisburg Gas Co., Harrisburg, Pa.
Counties Gas & Electric Co., Norristown, Pa.
Public Service Co. of Northern Illinois, Chicago, Ill.
Philadelphia Co., Pittsburg, Pa.

To date of this report replies have been received from

Rochester Gas & Electric Corporation, Rochester, N. Y.
Northern States Power Co., Faribault, Minn.
United Gas Improvement Co., Philadelphia, Pa.
Harrisburg Gas Co., Harrisburg, Pa.
Counties Gas & Electric Co., Norristown, Pa.
Philadelphia Co., Pittsburg, Pa.
Public Service Co. of Northern Illinois, Chicago, Ill.
Consumers Gas Co., Reading, Pa.
Nashville Gas & Heating Co., Nashville, Tenn.

These replies indicate that all of the companies who have adopted Bookkeeping Without Books follow the basic principle of the Baltimore System, although most of them make some minor changes to suit their local conditions or their own convenience. The following quotation under the heading "Difficulties, if any, experienced in its introduction or operation" are listed as a matter of record.

*United Gas Improvement Company*

"In general, we are thoroughly satisfied as well as gratified at the success attained through the change, and the proof of our firm belief in this system is the fact that we are going over to it just as rapidly as conditions warrant, meaning by that, at the expiration of the bound ledgers."

*Harrisburg Gas Company*

"Personally I feel as far as we have gone, that the new system offers more advantages than disadvantages over the old bound books. We realize that it will take a little time to round off the rough corners, but those who are handling the work are very favorably impressed with its possibilities. We are not hurrying the change—rather familiarizing ourselves thoroughly with each step taken, and where the system is carefully followed as far as local conditions will permit, I am satisfied that objections will be eliminated as we proceed with the work."

*Counties Gas & Electric Company*

"In answer to question 'B', would say that we have not experienced any difficulty in the introduction of the system, and we believe that it is going to work out advantageously. As stated in your letter, we, of course, could not expect to affect any savings as yet. It is considerable work and also some expense in making the change."

*Philadelphia Company*

"Decidedly difficult to train old employees to see the new system, being so different from the old. The radical change in disposing of ledgers which contained all the data relative to the consumers' account to the new method under which various data is now confined to the Meter Reading Book and other records which makes the delinquent customer more difficult to handle, causing more time in obtaining all information on that class of consumers. In this respect we are making constant changes of minor character to better the detail conditions, and are gradually getting results which in time we expect to come to the point of satisfaction."

*Nashville Gas & Heating Company*

"Referring to the actual savings effected as compared with the system formerly used, we will be able to reduce the cost of operating our Accounting Department about $5,000 this year. Although we began to change the system January 1st, we did not complete the change until April, so therefore, we feel that after this year our saving will be considerably more than the amount mentioned. We are going to say that we have practically eliminated the difficulties arising from the system. Anyway, much more so than were had with the old system."

The following is a tabulation of the modifications introduced by the various companies:

| | *Substitute for Ledger* | | | *Cash Posting* | | *Filing* | |
|---|---|---|---|---|---|---|---|
| | Sales Register | Coupon detached from bill | Maintain card record a duplicate of meter book | Daily | Accumulate to due date | Current and Separate | Delinquent together |
| Rochester Gas & Elec. Corp. | Yes | | Yes | Yes | | | |
| Northern States Power Co. | | Yes | No | Yes | | Yes | |
| United Gas Improvement Co. | | Yes | No | | Yes | Yes | |
| Harrisburg Gas Co. | | Yes | No | | Yes | | |
| Counties Gas & Elec. Co. | | Yes | No | Yes | | | Yes |
| Philadelphia Company | Yes | | No | Yes | | | Yes |
| Cons. G. Elec. Lt. & Pr. Co. (Balt.) | | Yes | No | | Yes | Yes | Yes |
| Public Service Co. of N. Illinois | | Yes | No | Yes | | | |
| Consumers Gas Co. | (In use since 1/1/23—well satisfied) | | | | | | |

(Continued on page 574)

*ADVERTISING SECTION*

B. J. MULLANEY, Chairman J. M. BENNETT, Vice-Chairman

CHARLES W. PERSON, Secretary

MANAGING COMMITTEE—1923

BARNES, CYRUS, Boston, Mass.
BLANCHARD, FRANK, L., New York, N. Y.
BURNS, J. J., St. Louis, Mo. (Missouri)
CADBY, J. N., Madison, Wis.
CAMPBELL, E. C., Benton Harbor, Mich. (Michigan)
CLIFFORD, F. S., Fitchburg, Mass. (Gas Sales of N. E.)
COONEY, E. J., Lowell, Mass.
CRONE, F. W., New York, N. Y. (Empire State G. & E.)
DEFREES, S. E., Rome, Ga. (Southern)
ENGLISH, A. L., Council Bluffs, Iowa (Iowa)
FRANKLIN, S. J., Millville N. J. (New Jersey)
GOULD, WM., Boston, Mass. (N. E. Gas Eng.)
HAWKS, A. W., Jr., Baltimore, Md.
HUMM, A. W., New York, N. Y.
JANSEN, F. A., Ottawa, Ont., Can. (Canadian)
JASPERSON, R. O., New York, N. Y. (Wisconsin)
LEACH, F. A., Jr., San Francisco, Cal.
MULHOLLAND, S. E., Fort Wayne, Ind. (Indiana)
MYRTLE, F. S., San Francisco, Cal. (Pacific Coast)
POTTER, CLYDE H., Los Angeles, Cal.
PRESSANO, E. P., New York, N. Y.
ROLSTON, R. J., Philadelphia, Pa. (Pennsylvania)
SOULES, E. E., Peoria, Ill. (Illinois)

# The Public Must Be Told

J. C. McQUISTON, Vice President, Public Utilities Advertising Association

YOU NEVER miss the water till the well runs dry. This is an old saying but still rings true. The other day, while riding on a railroad train, my eye caught a little pamphlet marked "Food for Thought" and underneath it the words "When Railroads Quit." I quote the item:

Discussing the abandonment of the Peoria & East St. Louis Railroad, leaving 12,000 persons without transportation, George W. Hinman asks in the New York American: "Suppose a man were to go to the 36 villages along the abandoned line a year or two from now and tell the farmer it was a good thing the railroad was abandoned, that the men who owned it were a lot of leeching capitalists; that they never produced anything of value to the farmer by carrying his goods to the city markets. Would they assent? Would they argue still that they alone produced the whole market value of the crops?"

Not so long ago we had an instance of this kind in Toledo. The rolling stock of an electric railway company was over night moved to another state. Then for a few days the people walked or found temporary means of transportation. Probably as the people walked, they thought. And probably they came to realize the real necessity of fixed arteries of transportation in the city.

### *Education Gets Results*

Of course, this is a revolutionary way to impress the public. A slower and a more pleasant way is through education, and this is why this particular group of publicity men, interested directly and indirectly in public utilities, is meeting in Atlantic City. We must be the educators of the mass. Our objective must be to secure not only the confidence of the public, but the full support of the public. If we can so educate the people that they will understand us and support us, we need have no fear of some unscrupulous politicians who delight in using the public utility as a political football.

What is the public's opinion of public utilities? In fact, what is the mass opinion

of anything that looms up as gigantic in its scope and operations? It is desirable for one to have cash, but it is unpopular to be a capitalist. Unfortunately, capital suggests monopoly, and unfortunately again there is a natural distrust of anything that appears to be monopolistic.

*Monopolies Are Necessary*

The public does not recognize that there may be good monopolies and bad monopolies—that big business may be good, and that big business may be bad. Generally speaking, big business is honorable not only because of its desire to conduct business according to law, but also on account of big business being subject to greater scrutiny. It is difficult to have the public understand that monopoly is a good thing, and yet the public can be made to realize that after all some monopolies benefit the general public.

Take your own city and answer me—Would you prefer a dozen competitive telephone companies, or one single telephone service that connects with all the telephone users in the community? You can plainly see from the standpoint of service and the standpoint of economy, that monopoly makes the service more satisfactory and most economical.

The same thing is true of the electric light service in your community. There is no doubt that the single centralized power station can most economically serve light and power to a given community. As time goes on greater economies and better service will be secured by power centralization and enlarging the zones of power distribution.

*Public Does Not Understand*

In transportation the picture is similar and it is very plain that if we do not support the electric railway lines and make them healthy arteries of transportation, the introduction of competitive transportation plans, whether they be competitive electric lines, jitneys or what-not, will simply tear down the structure that will get for the public the best service for the least money.

But the public does not understand, and, in consequence the public is often unknowingly unfair. Somehow, without demurring, the public pays extravagant prices for luxuries, but when it comes to a correct price for a service we find them nothing short of niggardly.

*Comparison with Luxuries*

For example, among the luxuries enjoyed by the poor, or the near poor, or the well-to-do, or the wealthy, such as ice cream, candies, and cigars,—have you heard of much storming against the makers of such luxuries? If there is some such complaint, it is possibly justified, because, as we all know, these three articles have enjoyed wonderful advances in retail prices.

When I was a boy, 5 cents bought a dish of ice cream and, at the same time, 5 cents bought a street car ride. The ice cream was a luxury, and the street car a service, and a necessity. That 5-cent dish of ice cream today brings at least 15 cents but, if you buy trimmings on it, the sky is the limit.

Then, take candy. We know that this has increased all the way from 150 per cent to 300 per cent, according to quality, artistic treatment of the box, etc. And the user of tobacco—because he enjoys his tobacco—has little if anything to say about increasing the price, even though it may mount to a total that equals his grocery bill.

There should be profit in providing the luxuries of life, but who cares whether

there is a fair profit or not for those who provide the necessary service in life?

It wouldn't be so serious to miss getting our dish of ice cream, or our box of candy, or even that after-dinner smoke. But, if you found yourself 5 miles from home, and no transportation facilities to get you there, you would think that service had a larger place in life than any of those luxuries. We sometimes discover this when, in traveling on a railroad, we miss making a connection. Then we must hire a taxi or automobile, and then we quickly see a possible service transferred into a luxury—at least as to price.

*Utilities Community Builders*

Another thought, and that is that the manufacturer of your ice cream, or your candy or your tobacco, or your many other luxuries, may or may not be building up your community. But the public utility company that has laid iron rails to your suburb and operated cars at regular intervals is putting something back in your pocket as a resident of the community. Your home is worth more, your business is worth more, your job means more because you can get to your home and get to your work easily, and people can come to see you and you can go to see your friends easily.

There is an old slogan, which runs something like this: "If not satisfied, tell us; if satisfied, tell others." Why not educate the public to this attitude, and show them that when they tell us they will get some results.

However, any and all educational work must be backed up by service. In addition to this service there must be a department representing the public in the offices of the utility company. We might call this a complaint department, or an information department, but what seems to be a splendid name is the Public Relations department. At any rate, this department must be manned by courteous, reasonable and capable people, who will recognize the point of view of the public and give to the public the necessary explanations.

*The Public Must Believe*

The public should be made to believe in the public utility. The public utility is the life blood of a community responsible for the flow of transportation, the flow of electric energy, the flow of gas, and the flow of water through the streets of the city, each an indispensable service without which a community can not thrive.

It is not merchandise that utilities have to sell. It is understanding.

Some call it good will. It is sometimes termed institutional. But, by whatever name it may be described, its whole purpose is a better understanding of the purposes of the utility by the public that is desired.

The utility may not seem to have anything to sell. Current, or water, or rides on an electric car are not like merchandise, sold across the counter. The people do not have to be encouraged to use the service. They just naturally use it. But, using it do they recognize in its service,—what is back of it? Do they realize that it is a community builder? Just as the school house, the church, the town hall, the fire department and the police department are builders of better community life, so are the electric light companies, the traction companies, and the water companies builders of better community life.

People can be made to realize that wherever the rails of the car line run, there is an extension of convenience that increases values, not only in real estate,

and in general business, but in the real value of each and every individual in the community.

Cities expand because of the expansion of the public utilities that bring to the people light, heat, water, and transportation service. And there is more real service delivered per dollar by such public service enterprises than by any other individual or organized force.

# Pacific Coast Gas Association's Meeting

THERE ARE two events scheduled for California in September. The total eclipse of the sun, and a Gas Man's Convention. The first has been specially promoted, it is said, by the real-estaters of Southern California. The purpose being to distract attention from, and offset the great movement of folks that are sure to proceed to the 30th Convention of the Pacific Coast Gas Association at Del Monte, Calif.

The program, provided by the Convention Committee and Del Monte itself are responsible for the interest and indications are that a large attendance will be present.

The session starts on Tuesday, September 11th. In the morning will be the usual business meeting. In the afternoon this program will be taken over by the Accounting Committee. Two interesting subjects are to be presented:—

First, Meter Shop Cost Accounting.

Next, The Keeping of Consumers' Accounts by Machine.

The Wednesday session is assigned to the Technical Committee. The program prepared is very extensive and includes committee reports on subjects that are of immediate importance to the industry.

The final day of the business session, Thursday, is given over to the Commercial Section. A report on the results accomplished by the Gas Appliance Society during the past year will be read. This organization of the retail trade in gas appliances is a new venture that is making great progress in stimulating interest in good standard gas appliances.

A new topic will be presented by Mr. Jas. Lynch. This deals with the problem of "Training Men for the Gas Industry." Mr. Lynch is a successful promoter of big business and a former manager of a co-operative movement in the fruit industry. Collaborating with Mr. Lynch in preparing this address has been a manager of an appliance store, a sales manager of a utility and an engineer of a gas company. As Mr. Lynch is a student of sales practice and a developer of sales energy it can be accpted that this subject will be properly presented.

The banquet will be the usual big event. An excellent musical program has been arranged. Mr. LeRoy Edwards will be the speaker of the evening. His subject will be "Public Relations" and as attorney for the Southern Counties Gas Company, he is well qualified to discuss the issue.

An exceptionally good attendance is expected as the membership has been rapidly increasing, fully 850 members now being on the rolls.

**A good example of the use of bill-boards**

# The Key to Fair Regulation

GROVER C. MAXWELL, Former Secretary, Ohio Public Utilities Commission.

PERHAPS THE most conspicuous self-advertiser in modern life is the public utility. Good service, poor service, indifferent service, hourly gives advertisement, whether for good or ill.

Every perfectly made telephone connection is an advertisement for good service. Every bungled or poorly made connection advertises doubtful service. The lights that shine when the button is pushed advertise efficiency and constant readiness to serve. Darkness advertises another story.

Modern, comfortably equipped street cars, manned by efficient and courteous crews, taking swiftly the passenger to his destination, constitute an advertisement that brooks no refutation. Dilapidated cars, manned by careless unthoughtful crews, conveying passengers homeward over flat wheels laboriously driven over rough tracks, advertise the fact that something is radically wrong somehow, somewhere.

But it would be a poor public utility manager, indeed, who placed his trust solely in the inherent nature of his business to tell its own story. Even uniformly good service in time ceases to cry out in its own behalf. Your public becomes easily surfeited, and perfection may all too soon become the accepted commonplace. Conversely, continued poor or indifferent service excites cumulative wrath and disaster lies just around the corner unless sympathetic understanding and co-operation for the overcoming of difficulties may be had from your public.

It follows then, that if your service is uniformly good, you should remind your public of that fact and tell them why it is good. Tell the story of the men with faith who invested of their means; tell the story of the men with vision who struggled for the achievement of an ideal; tell of the army of men and women who daily go about tasks to make the giving of service possible; tell of your plans for future development and even further perfections of service. If, on the other hand, you are confronted with difficulties which make the attainment of the ideal of service impossible, frankly tell your public so. Tell them what the difficulties are. If further patience and co-operation from them are necessary, boldly ask for it.

To him who in the light of public favor tells his story, in the time of adversity come friends.

To him who makes his public the confidant of his troubles, there come many to rejoice with him over difficulties overcome.

How, then, shall we tell the public the story?

1. Through the medium of paid advertisement in the columns of the press.
2. Through legitimate items of news about your business.
3. Tell the story yourself, orally, before representative audiences of men and women.

I am an apostle of the SPOKEN WORD. You utility men should be one hundred per cent believers in the PRINTED word. Yet there need be no inconsistency.

Let the spoken word become the printed word, that he who has ears but hears not, may with his eyes see and under-

stand that he who with his eyes sees, may later eagerly hear, and better understand.

And let the printed word become the spoken word, that he who has eyes to see, but sees not, may perchance, hear, and hearing, understand.

The regulation of the public utility business, whether it be exercised by legislature, state commission, or city council, is primarily in the hands of the public. To the extent that the public understand the underlying facts and principles of that business, to that extent will the public's regulation be wise and just and fair.

# Attractive Window Display Sells 150 Gas Irons

THE ATTRACTIVE window display shown here, together with two newspaper advertisements, sold 150 gas irons in two weeks for the York Gas Company, York, Pa. No field sales representatives were used during this sale. This emphasizes two things:—

Don't neglect the opportunities offered in your display windows and show rooms. A good window and salesroom display is invaluable.

Don't overlook the gas iron and its related various small appliances. It is the multiplied uses of gas which build up the sales of gas.

## The BEGGARS of CORINTH

*Aesop* 1923

"OW!" cried a Beggar, in the street of Corinth. "How my back itches!"

"Mine, too!" echoed his Mate. "I can hardly stand it!"

The two tried every way they could think of to reach the affected spots. They twisted, squirmed, wiggled and wriggled. They made very faces and contorted their bodies in the effort to stop the misery of the itching.

At last one of them had a brilliant idea.

"Say!" he exclaimed. "I'll tell you what let's do! You scratch my back, and I'll scratch yours!"

Action was suited to words, and in a few minutes both Beggars were smiling with relief.

The Beggars had learned one of the biggest lessons in life—the lesson of Co-operation.

"You scratch my back, and I'll scratch yours." How often do we find ourselves where the application of the spirit of those words would relieve the situation.

Your own relations with the electric light and power company, for example. What we need is your co-operation. What you need is our service. Co-operation from you increases the excellence of our service to you.

Do you get the analogy?

Co-operation can only come with interest. Interest yourself in the problems of the electric light and power company in your community. Their prosperity means your prosperity. A little wholesome study here will mean dollars for you later.

Every live citizen in the community should interest himself in the public utilities, even to the extent of owning stock in them. Partnership in an organization means interest in it. If every customer of this company owned a little stock in it, we would have ideal municipal ownership—the utility owned and controlled by the public, yet free from the possibility of political manipulation.

Let's co-operate—

"You scratch my back, and I'll scratch yours!"

**Kansas Gas and Electric Company**

"At Your Service"

Statement No 98

## The MERCHANT and His OXEN

*Aesop* 1923

"It's a fine steer I've got here," cried the Merchant to the faithful Oxen which pulled his wagon. "As long as you were pulling your load up hill you earned your feed, but now we have been going down hill for several days. It's no exertion to you, yet you keep on eating my good oats and corn as much as ever. I'm going to stop feeding you until the road starts up hill again."

In vain the Oxen pleaded.

"The . . d may look easy today," they said, "but if you begrudge us our food now, how will we have strength to pull the load when we reach a steep hill?"

The thoughtless Merchant stuck to his resolution. All seemed to go well for a time. The Oxen grew thinner and weaker, but as long as the road led down hill they struggled along. Came a day, however, when the bottom of the valley was reached and the climb on the other side began.

The Merchant cracked his whip, and shouted to the Oxen, but they, poor beasts, weakened by starvation, had not strength enough for the attempt and at last sank down dead.

"Fool that I was!" exclaimed the Merchant. "By begrudging the Oxen their food I saved a few shekels, but now I am ruined because I cannot move from this place, where I will become the prey of robbers or wild beasts."

There's a big moral in Aesop's quaint fable about the Merchant and his Oxen—a moral the American Public is just beginning to learn. This is it:

Remember that the mere furnishing of good service is just one of the duties the Public Utilities owe to the Public. Just as important, because it means so much to the growing community, is the building of extensions.

It is the building of these extensions which constitute the steps the electric light and power company must climb. Since the state allows only a "reasonable return" on a "fair value" of that part of our property "used and useful" in the business, and since this "reasonable return" does NOT include any profits with which to build extensions, we must borrow from the public to build extensions for the public.

And here is where the long-sighted policy helps and the short-sighted policy hinders us. If the public shows confidence in us and its willingness to co-operate, we are able to inspire confidence in the moneyed public, which means we are able to borrow the money required for extensions. A lack of confidence and co-operation works the other way around.

Give us your co-operation, your confidence, your support—help us in our task of building toward a better, bigger community.

**Kansas Gas and Electric Company**

"At Your Service"

Statement No 99

## MANUFACTURERS SECTION

F. A. LEMKE, Chairman — G. W. PARKER, Vice-Chairman

C. W. BERGHORN, Jr., Secretary

### MANAGING COMMITTEE—1923

ABBOTT, M. E., Taunton, Mass. (Gas Sales of N. E.)
BAILEY, JR., E. P., Cleveland, Ohio
BARTLETT, C. E., Philadelphia, Pa. (New Jersey)
BARTLETT, C. E., Philadelphia, Pa. (Pennsylvania)
COLLINS, D. J., Philadelphia, Pa.
CRANE, WM. M., New York, N. Y.
CREVISTON, A. E., Baltimore, Md. (Southern)
DE HART, JR., J. S., Newark, N. J.
DICKEY, E. S., Baltimore, Md.
GREENE, J. J., New York, N. Y.
GIBSON, W. R., Toronto, Ont., Can. (Canadian)
HAMMOND, E. W., San Francisco, Cal. (Pacific Coast)
KNAPP, F. H., Pittsburgh, Pa.
MCCULLOUGH, CHARLES, Milwaukee, Wis. (Wisconsin)
MCDONALD, DONALD, New York, N. Y.
MAXON, H. R., Muncie, Ind.
NORMAN, E. A., New York, N. Y.
NORTON, ARTHUR E., Boston, Mass. (N. E. Gas Eng.)
PARKER, JOHN F., Rockford, Ill. (Indiana)
ROBERTS, EARL W., Detroit, Mich.
ROPER, GEO. D., Rockford, Ill. (Illinois)
ROPER, GEO. D., Rockford, Ill. (Iowa)
SHIDENGLANZ, C. H., Dallas, Texas (South Central)
SIMLER, O. P., Lorain, Ohio
SMITH, W. L., Battle Creek, Mich. (Michigan)
STITES, TOWNSEND, Gloucester, N. J.
TAPPAN, W. H., Mansfield, Ohio

### CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

**Exhibition**—F. A. LEMKE, Kalamazoo, Mich.
**Nominating**—J. S. DEHART, JR., Newark, N. J.
**Division of Accessories Manufacturers**—EARL W. ROBERTS, Detroit, Mich.
**Division of Apparatus & Works Manufacturers**—D. J. COLLINS, Philadelphia, Pa.
**Division of Gas Range Manufacturers**—W. H. TAPPAN, Mansfield, Ohio.
**Division of Heating Appliance Manufacturers**—E. P. BAILEY, JR., Cleveland, Ohio.
**Division of Industrial Appliance Manufacturers**—H. R. MAXON, Muncie, Ind.
**Division of Lighting Appliance Manufacturers**—TOWNSEND STITES, Gloucester, N. J.
**Division of Meter Manufacturers**—DONALD MCDONALD, New York, N. Y.
**Division of Office Labor Saving Devices**—E. A. NORMAN, New York, N. Y.
**Division of Water Heater Manufacturers**—O. P. SIMLER, Lorain, Ohio.
**Division of Supply Manufacturers**—J. J. GREENE, New York, N. Y.

# Exhibitors at the Fifth Annual Convention

*The following is the list of exhibitors to date with the allotment of exhibition spaces.* (EDITOR'S NOTE.)


A-B Stove Company, Battle Creek, Mich. ..... 31 & 32
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Acme Brass Works, Detroit, Mich. ..... 137
American Gas Appliance Company, Brooklyn, N. Y. ..... 126
American Gas Furnace Co., Elizabeth, N. J. ..... 148
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American Manufacturing Co., The, Dayton, O. ..... 63
American Meter Company, New York, N. Y. ..... 194 & 195
American Range & Foundry Company, Chicago, Ill. ..... 60
American Safety Lock Company, Ardmore, Pa. ..... 65
Armstrong Cork & Insulation Co., Pittsburgh, Pa. ..... 58
Atlantic Tubing Company, Providence, R. I. ..... 53
Baltimore Gas Appliance & Mfg. Co., The, Baltimore, Md. ..... 33 & 34
Barber-Greene Company, Aurora, Ill. ..... 100 & 101
Bartlett Hayward Company, The, Baltimore, Md. ..... 117
Beaumont Co., R. H., Philadelphia, Pa. ..... 98 & 99
Blodgett Co., The G. S., Burlington, Vt. ..... 29
Bryant Heater & Mfg. Co., The, Cleveland, O. ..... 82 & 105

Builders Iron Foundry, Providence, R. I. ..... 193
Burroughs Adding Machine Co., Detroit, Mich. ..... 180
Chambers Mfg. Company, Shelbyville, Ind. ..... 56 & 57
Chicago Pneumatic Tool Company, New York, N. Y. ..... 122 & 123
Chicago Vitreous Enamel Product Co., Cicero, Ill. ..... 182
Clark & Co. Div., Geo. M., Chicago, Ill. ..... 40 & 41
Cleveland Co-operative Stove Co., The, Cleveland, O. ..... 88
Cleveland Heater Co., The, Cleveland, O. ..... 134 & 135
Clow & Sons, James B., Chicago, Ill. ..... 17
Combustion Utilities Corp., New York, N. Y. ..... 97 & 120
Connelly Iron Sponge & Governor Co., New York, N. Y. ..... 205
Connersville Blower Co., Connersville, Ind. ..... 173 & 183
Crandall Pettee Co., The, New York, N. Y. ..... 73
Crane Company, Chicago, Ill. ..... 108
Crane Company, Wm. M., New York, N. Y. ..... 26 & 27, 35 & 36
Cribben & Sexton Co., Chicago, Ill. ..... 3
Cruse-Kemper Company, Ambler, Pa. ..... 154
Cutler-Hammer Mfg. Co., The, Milwaukee, Wisc. ..... 76
Dangler Stove Co. Div., Cleveland, O. ..... 13
Davidson Co., M. T., New York, N. Y. ..... 94
Defiance Check Writer Corp., Rochester, N. Y. ..... 208
Detroit Stove Works, Detroit, Mich. ..... 44 & 45
Ditto Incorporated, Chicago, Ill. ..... 204
Dresser Mfg. Co., S. R., Bradford, Pa. ..... 141
Elliott-Fisher Co., New York, N. Y. ..... 188 & 198
Equitable Meter Co., Pittsburgh, Pa. ..... 206
Eriez Stove & Mfg. Co., Erie, Pa. ..... 4
Estate Stove Co., The, Hamilton, O. ..... 46
Foxboro Co., Inc., The, Foxboro, Mass. ..... 140
Gas Age-Record, New York, N. Y. ..... 160
Gas Industry, Buffalo, N. Y. ..... 161
Gas Machinery Co., The, Cleveland, O. ..... 102
Gas Purifying Materials Co., Long Island City, N. Y. ..... 70
Gas Utilities Corp., Philadelphia, Pa. ..... 54 & 55
General Gas Appliance Co., New York, N. Y. ..... 49
General Gas Light Co., New York, N. Y. ..... 47 & 48
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Helme & McIlhenny, Philadelphia, Pa. ..... 197
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## In Memoriam

**J. B. Hill, Manager, Welsbach Co.,**
**Pittsburgh, Pa.**

*INDUSTRIAL GAS SECTION*

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# One Great Opportunity

J. A. SUTTON, The Selas Co., Philadelphia, Pennsylvania.

"POWER" is the outstanding word in the present American industrial age. When the words "Efficiency" and "Service" are linked with it, you have what might be termed the dominant passion, the ultimate goal of American industry. The proper linking of these three typifies industry's present idea of engineering success.

The great power plant equipment manufacturers, such as turbine and boiler works, electrical equipment concerns, etc., together with the leading power plant engineers have emphasized not alone Power but, what is more important, its proper use and control, so continually and so strongly that the present power plants of the average manufacturer approach perfection to a degree not usually attained in any other branch or department of their plant. The net work of sidings, the elaborate coal handling apparatus, the overhead stokers, traveling grates, ash handling systems, together with the boilers, turbines, generators, switch boards and the multitudinous system of water pumps, feed water heaters, blowers, etc., represent the lure of efficiency and scientific design. And all of this has been brought about by intelligent education along these lines. They stand as a memorial to the prodigous educational activity on this subject which has been carried on by the engineers and the manufacturers and distributors of electrical, steam and all varieties of power plant equipment.

That this efficiency has paid in the resulting conservative and economical use of energy in the power plant, is proven by the huge investments being made every day in proper equipment and its proper installation.

The modern manufacturer who contemplates the erection of a power plant is beyond the stage where he stops to quibble over the cost of expensive equipment. He realizes its advantages and often it is only the financial condition of his company that prevents him giving the de-

signing engineer full sway in procuring for him a fully equipped, scientifically up-to-the-minute plant. Such figures as $25,000 for a stack, $8,000 for a blower, $10,000 for feed water heaters, $30,000 for coal handling machinery, $20,000 for switchboards and control boards, etc., are unquestioned and accepted as necessary expenditures, together with a variety of other similar items that make up the modern $250,000 power plant.

But there is a strange inconsistency practiced, nevertheless, by this same manufacturer. It is the difference in not only the appreciation but in the considerations of conservation and efficiency with which he treats the *different* forms of energy which he utilizes in his plant. So long as that energy has its source in his own power plant, it becomes an object of study, refinement and control. But if it is procured from an outside source it is generally accepted and expected to be perfection and a cure for all needs. The very suggestion of refinement or control is received with hesitancy and objection and a proper expenditure for such equipment is viewed as a needless and an annoying expense.

This applies particularly to the industrial use of commercial gas.

This fuel, as received by the manufacturer, while being by far the most convenient, also contains by far the greatest quantity of useful heat as compared to any other fuel. And it is far more simple to liberate and control this heat than in the case of any of the other fuels. Yet there is not one plant engineer or executive in a thousand who ever begins to appreciate the energy which he loses every day through the improper combustion of the gas that he is using, nor can he even be approached upon the subject without difficulty and diplomacy. I think I can illustrate this point in no clearer way than to state that I personally have had innumerable experiences where I have offered to absolutely guarantee a minimum saving of $200 on a $1000 per month gas bill by the investment of $3500 in control equipment and have had the proposition turned down without a qualm. And my experience is the usual experience of the gas engineer everywhere.

Why should this be, especially in the face of the knowledge and expenditures in power plant equipment? The answer is—the gas men have been asleep—other distributors of energy have stolen their field by a wise and progressive advertising and educational movement. Gas has survived in industries only because of its own merits—its superiority. There is no evidence that proves this more emphatically than the fact that thousands of industries are using gas today inefficiently *but are still using it.*

There is no individual who has so great an opportunity knocking at his door as the gas man—once industry is educated to the point of using gas as fuel and *using it efficiently.*

Gas is a highly refined fuel—to use it carelessly is to throw away concentrated value. To compare it in price on the same footing with the crude fuels, without crediting it in money value for all of the various advantages refinement has given it, is an injustice. Yet ignorance on the part of the consumer causes him to habitually do these very things. Gas will never be able to compete so long as consumers are coal wise and gas foolish. Education alone can correct this.

Great strides are being made today by some of the leading gas companies who realize that the basis of expansion in the industrial field must be the confidence and enthusiasm of the consumer. They

are exerting their efforts to show them how to use gas industrially *and economically*. The American Gas Association with its Advertising Section and the new Industrial Gas Section is blazing the trail for the highway of success over which all gas companies will ultimately travel. It deserves the concentrated effort and support of all gas men in this pioneer work, for, by such effort, will the desired results be more quickly and directly realized.

# Results Count

THE INSURANCE COMMITTEE of the Accounting Section for the past three years has been gathering statistics to establish the ratio existing between gas company fire losses and the total amount paid by gas companies in the form of premiums for fire insurance. As a result of this effort the Committee induced the underwriters to issue a new schedule for rating gas plants designed to afford the gas companies a 25% saving in insurance premiums. This effort has entailed much work not only by the Committee but has involved much cooperation on the part of our member companies in answering questionnaires and digging for authentic statistics on their fire losses and premiums for many years back. No doubt some of our members have felt that these questionnaires have been somewhat of a nuisance—and have wondered whether all the effort was worth while. The Committee has also been concerned as to the tangible results of its efforts and has endeavored to check up carefully on the results of re-ratings of all gas plants under the new schedule. This has been slow work but it is with considerable pleasure that we print herewith the savings in premiums reported to the Committee by twelve representative gas companies after re-ratings of their plants under the new schedule. These plants are located in eight different states including Pennsylvania, Indiana, New York, South Carolina, Iowa, South Dakota, Florida, and Wisconsin and the range in their annual dues indicates the variety in size of plant reporting.

| Co. | Prem. paid Prev. to Rerating | Savings in Prem. after Rerating | An. Dues in A. G. A. | Ratio of Savings to Dues |
|---|---|---|---|---|
| A | $9,710.00 | $2,282.00 | $5,174.00 | 43% |
| B | 4,541.00 | 1,125.00 | 1,147.00 | 100% |
| C | 3,903.00 | 1,142.00 | 533.00 | 220% |
| D | 4,161.00 | 1,116.00 | 194.00 | 585% |
| E | 4,723.00 | 798.00 | 420.00 | 190% |
| F | 2,600.00 | 570.00 | 261.00 | 219% |
| G | 1,792.00 | 429.00 | 102.00 | 400% |
| H | 1,277.00 | 287.00 | 114.00 | 254% |
| I | 859.00 | 269.00 | 72.00 | 371% |
| J | 726.00 | 199.00 | 130.00 | 146% |
| K | 879.00 | 161.00 | 101.00 | 160% |
| L | 939.00 | 148.00 | 87.00 | 175% |
| Total | | $8,526.00 | $8,335.00 | |

The above are gratifying beyond the expectations of the Committee. Our efforts have certainly proved worth while and we trust that our member companies will continue to cooperate with our Committee by reporting promptly to Headquarters the results of reratings on their plants. The Committee feels that a still further reduction in premiums is possible and we know that our members will feel justified in supplying them with such additional statistics as may be required to this end.

## The Gas Fired Bake Oven

**Automatic Conveyor type oven with baking chamber 50 feet long, 9 feet wide and 1 foot high.**

**Capacity— 2,500 one-pound loaves of bread per hr.**
**14,000 one-pound loaves of bread per day.**

**Average monthly gas consumption—396,000 cu. ft.**

**For further information, apply to A. G. A. Headquarters.**

# Gas Has Now Entered the Industry that is Helping to Roof the Nation's Homes

D. R. RYDER, Public Service Gas Co., Newark, N. J.

The patentees and producers of a new form of asphalt slate surfaced strip shingle were confronted with the problem of embossing a design on a sheet of asphalt coated felt that was covered with crushed slate firmly imbedded in the asphalt coating. This problem had never been solved by roofing engineers heretofore.

In brief, the contemplated method of manufacture of this new and improved shingle was to take rolls of roofing from one hundred to two hundred feet long and three feet wide, put them on spindles and draw them through a device that would emboss four straight black lines at regular distances across the sheet for the full length of the sheet. Another set of drawer rollers was to take the sheet after it had been embossed and draw it through a machine for cutting the shingles from the sheet. The cutting operations had been done before, having been successfully developed by a concern in Chicago, Illinois.

The problem of the manufacturers, therefore, was confined to the one operation of embossing the continuous set of four black lines on the slate surfaced sheet and incidentally to fasten together the ends of each roll so that an endless stream of material would be fed to the embosser and cutter. The black lines that form the design of this shingle had to have several qualities. The design had to be permanent, it could not detract from the weather-proofing qualities of the shingle, it could not be "smeary," it had to go on the sheet at identical intervals at all times so that it would align with the cutting operations.

Practical experience told the manufacturers that indelible black lines could be obtained if the jet black asphalt coating, already on the sheet of the roofing, could be utilized. But this heavy coating of asphalt was cold and completely covered with a heavy surfacing of ground slate.

Consultations between the writer and the manufacturing interests resulted in the decision to have built a device that would play four lines of gas flames at the portions to be designed. These lines of flames to be four feet long so that sufficient heat would be applied to the sheet to offset the speed that the sheet sped through the machine, i.e., one hundred feet a minute. It was computed that, considering the size of the burners and the flame, burners four feet long would reduce the asphalt to a consistency of a heavy liquid. Immediately following the heating of the asphalt coating four drag shoes, with contact runners 3/8" wide, ran over the sheet. It was believed that this would result in the ground slate surfacing being pushed down into the heavy coating and the coating brought to the surface at the points desired. If it would work, as theory seemed to indicate, indelible lines would be produced in a continuous operation, synchronized with the other operations of cutting, etc., and without

introducing any foreign agencies,—an ideal condition.

An order for the machine was given and it was installed and worked to perfection and over a period of four months has given unvarying success. From this first machine, as is natural, plans have been drawn for a new one, soon to be installed, using all the principles originally used, but refined to give better control and greater speed.

It would be interesting to note that the manufacturers, while experimenting with gas, decided to try gas as the medium for fastening together the ends of the large rolls of roofing. A small stand of burners was erected. The end of one roll was laid upon the flame and when the asphalt melted it was quickly applied to the end of the next roll. This splice was then passed through pressure rollers that also fed the sheet into the marking device. The splice, so made, was perfect for strength and smoothness.

The maximum gas consumption of the combined burner equipment is 700 cubic feet per hour and turns out 5,000 shingles per hour.


## Gas Company Forms

**Are you in touch with the latest developments in application forms, appliance rental contracts, etc?**

**Complete exhibits of the best forms used by gas companies, in their relations with customers, will be available at the**

**ACCOUNTING SECTION EXHIBIT**

**Every day 9:00 a. m. to 6:00 p. m.**

**A. G. A. Annual Convention and Exhibition, Atlantic City, October 15-19, 1923**

## COMMERCIAL SECTION

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Retail Pricing—A. P. POST, Philadelphia, Pa.
Sales Stimulation—J. E. DAVIES, Chicago, Ill.


# Fall and Winter Gas Merchandising Plans

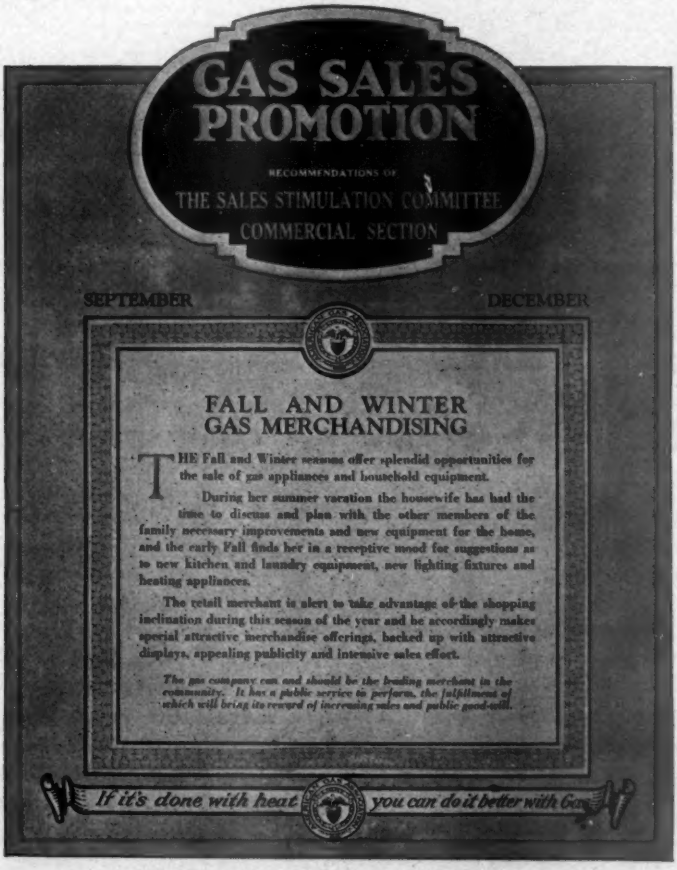
FALL AND WINTER are the seasons when gas merchandise can be sold most effectively and in large volume. At no other season of the year does a diversified line of appliances have quite so strong a buying appeal as during this period. The Sales Department must be alert, however, to take advantage of its opportunities.

People have returned home from their summer outings and are planning to make the home cozy and comfortable for the winter. The Thanksgiving, Christmas, and New Year Holidays are always great occasions for gathering around the festive board and the women of the household are always susceptible to the appeal of a new and beautiful gas range in which to cook those delicious holiday meals. Then again, the threatened coal shortage will compel thousands of households to turn to gas for heating. Advantage should be taken of this condition to ensure the sale and installation of efficient and approved heating devices. And for the same reason that they turn to gas for heating, the householder will also need a gas water heater. The coal pile must be conserved for the bitter wintry days and the kitchen coal stove will soon disappear as a medium for cooking and water heating if we all go after its replacement aggressively.

Gas lighting also has a wonderful opportunity to come into its rightful place during the long dark evenings. People want cheerfulness and light, plenty of both. And nothing can give them these

necessities as well as the well designed modern gas lighting equipment.

In short, this time of year, with its demands for increased home comfort, finds the householder with many and varied requirements to be filled and the gas man should be the one to supply them. This business does not come of its own choosing however—we must go after it. What a wonderful opportunity and incentive for the gas man!


GAS SALES PROMOTION
RECOMMENDATIONS OF
THE SALES STIMULATION COMMITTEE
COMMERCIAL SECTION
SEPTEMBER
DECEMBER
FALL AND WINTER GAS MERCHANDISING
THE Fall and Winter seasons offer splendid opportunities for the sale of gas appliances and household equipment.
During her summer vacation the housewife has had the time to discuss and plan with the other members of the family necessary improvements and new equipment for the home, and the early Fall finds her in a receptive mood for suggestions as to new kitchen and laundry equipment, new lighting fixtures and heating appliances.
The retail merchant is alert to take advantage of the shopping inclination during this season of the year and he accordingly makes special attractive merchandise offerings, backed up with attractive displays, appealing publicity and intensive sales effort.
The gas company can and should be the leading merchant in the community. It has a public service to perform, the fulfillment of which will bring its reward of increasing sales and public good-will.
If it's done with heat you can do it better with Gas

# Dollar Appliance Sales Per Meter Contest

THE FOUR prizes to be awarded in this contest will be publicly presented during the October Convention in Atlantic City. The winning companies will be from those who have sent us their monthly appliance sales per meter for the twelve months' period, September, 1922, to August, 1923, which is inclusive.

*Returns must reach Association Headquarters on or before September 15th.*

The ten leading companies in the Northern and Southern Groups for the ten-month period ending June 30th are as follows:—

**Average monthly sales per meter for 10 months ending June 30, 1923.**

| Northern Group Company | Address | Meters | Sales per Meter |
|---|---|---|---|
| 1. Lebanon Gas & Fuel Co., | Lebanon, Pa. | 1,200 | $1.39 |
| 2. Emporia Gas Company, | Emporia, Kansas | 1,028 | 1.24 tie |
| 3. North Shore Gas Company, | Waukegan, Ill. | 14,405 | 1.24 tie |
| 4. Freeport Gas Co., | Freeport, Ill. | 5,160 | 1.04 |
| 5. Wisconsin Valley Elec. Co., | Stevens Point, Wis. | 1,035 | 1.03 |
| 6. Elkhart Gas & Fuel Company, | Elkhart, Ind. | 5,465 | .93 |
| 7. Madison Gas & Electric Co., | Madison, Wis. | 10,598 | .92 |
| 8. Arlington Gas Light Co., | Arlington, Mass. | 9,105 | .80 |
| 9. South Haven Gas Company, | South Haven, Mich. | 930 | .77 |
| 10. Lexington Gas Company, | Lexington, Mass. | 560 | .74 tie |
| 10. Pocatello Gas & Power Co., | Pocatello, Idaho | 1,738 | .74 tie |
| **Southern Group** | | | |
| 1. Winston Salem Gas Co., | Winston Salem, N. C. | 2,050 | 1.86 |
| 2. Orlando Gas Company, | Orlando, Fla. | 1,451 | 1.81 |
| 3. Rocky Mount Public Works, | Rocky Mount, N. C. | 2,332 | 1.80 |
| 4. Southern Public Utilities Co., | Charlotte, N. C. | 4,882 | 1.51 |
| 5. Knoxville Gas Company, | Knoxville, Tenn. | 4,584 | 1.37 |
| 6. Baton Rouge Electric Co., | Baton Rouge, La. | 2,234 | 1.22 |
| 7. Roanoke Gas Light Company, | Roanoke, Va. | 6,335 | 1.15 |
| 8. Columbus Electric & Power Co., | Columbus, Ga. | 2,729 | 1.10 |
| 9. Albuquerque Gas & Electric Co., | Albuquerque, N. Mex. | 1,599 | .72 |
| 10. Mobile Gas Company, | Mobile, Ala. | 7,699 | .65 |

## Summer Meeting

## New Jersey Gas Association

### Ocean City Yacht Club

**Ocean City, New Jersey**

**Wednesday, September 19, 1923**

# A Figure on Yearly Gas Appliance Sales

A STUDY of the returns of dollar appliance sales per meter being submitted by nearly two hundred gas companies in this contest gives some astounding information on the total appliance sales which will be made during the twelve months period beginning September, 1922.

Taking the figures of the nine months so far reported—77 companies show a total appliance sales of $5,451,660.00 with a total of 1,547,465 active meters. This is an average of $3.52 per meter for these nine months. Assuming that this average will hold over the twelve months period, the total sales of these 77 companies would be $7,268,880.00. This represents a sales per meter of $4.69, but there are 9,200,000 active meters installed throughout the country.

Therefore, if this average per meter were maintained for all meters for the full twelve months the sales of appliances by gas companies would aggregate the sizeable figure of $43,148,000,00. Add to this the total sales of dealers and you have some idea of the tremendous volume of business done in gas appliances in this country.

**Attractive Window Display—Laclede Gas Light Co.**

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**Cast Iron Pipe Standards**—WALTON FORSTALL, Philadelphia, Pa.
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**Disposal of Waste from Gas Plants**—L. J. WILLIEN, Boston, Mass.
**Distribution Design**—R. G. GRISWOLD, New York, N. Y.
**Fundamentals of Condensing and Scrubbing**—W. H. EARLE, Rochester, N. Y.
**Holder**—H. E. BATES, Chicago, Ill.
**Measurements of Large Volumes of Gas**—M. E. BENESH, Chicago, Ill.
**Nominating**—C. N. CHUBB, Davenport, Ia.
**Program of Research**—DR. J. F. WING, Boston, Mass.
**Purification**—DR. A. R. POWELL, Pittsburgh, Pa.
**Refractory Materials**—W. H. FULWEILER, Philadelphia, Pa.
**Specifications for Gas Coal**—H. J. ROSE, Pittsburgh, Pa.
**Standardization of Capacities of Consumers' Meters**—WALTON FORSTALL, Philadelphia, Pa.


# The Proposed Process for Complete Gasification of Coal by the Use of Oxygen

L. J. WILLIEN, Charles H. Tenney & Co., Boston, Mass.

PRESIDENT MUNROE made the following remarks before one of the Technical Sessions at the 1921 Convention in Chicago.

"I can see no line of undertaking where there is more to be accomplished or where there are greater prospects of accomplishments for the engineer than in the gas industry. All power to you and to your proceedings. I am sure that you will keep at it, that you will go on and on, and it will not be very long before there will come out of these meetings outstanding developments, changes in methods, that will make what we are accustomed to, look very poor by comparison. Some of you gentlemen are going to be able to give a gas from raw coal of 420 B.t.u.'s and we are going to have no by-products to handle or sell, nothing but ashes to take away from the coal. When you give that to us (and you are going to give it to us within the next five years) then the problem of the owner of gas property will be much simpler than it is today, when he must make coal gas with an enormous quantity of coke left as residue, which puts him into a business of a

larger dollars and cents annual turnover than his gas business. You must not give us that kind of a process. You must give us the other. Today we make coal gas and then try to use the coke up in our water gas. What we want is to have you give us a gas plant that will enable us to put coal in and take gas out and have nothing but cinders."

What President Munroe had in mind was a process which involves the complete gasification of coal. There is no doubt but that such a process will be the ideal way to make gas. A great deal of work has been and is being done on the development of such a process. During the past three years the Carbonization Committee has had a section which has kept in touch and reported on the various processes that have been proposed for the complete gasification of coal. All of the processes reported are in the experimental stage and at this writing it is not possible to predict from the data submitted when any of them will become a commercial success.

The purpose of this paper is to present the gist of the data available on the proposed process of completely gasifying coal in a gas producer using 90% oxygen and steam continuously instead of air and steam intermittently. The figures given in connection with the operation to be expected from such a process were all derived from theoretical or, in some cases, arbitrary consideration of the process.

The use of oxygen instead of air in gas producers was discussed in a paper presented before the Gas Institute in England by H. J. Hodsman and Professor J. W. Cobb in 1920 (Gas World, June 5, 1920, page 510). Mr. E. W. Jefferies of the Jefferies Norton Corporation, Worcester, Mass., presented a paper on the same subject before the New England Association of Gas Engineers in 1921. Professor R. S. Tour of the University of Cincinnati has been interested in the proposition for some years and has submitted some figures in connection with the process.

The figures obtained from the above sources are given in a table at the close of this paper. The figures submitted by Professor Tour were arrived at from theoretical physico-chemical considerations of equilibria and reaction rates, using constants and temperatures derived from standard operations of air producers and water gas generators. Mr. Jeffries' figures were obtained by taking the average result obtained on "Morgan Producers," using air and steam and arbitrarily reducing them to a 2% nitrogen base, assuming that with oxygen there will be some improvement in the percentage of the hydro-carbon gases due to the additional hydrogen and the longer period of its contact with the hot fuel and nascent gases, as compared with producer gas. Mr. Jeffries, however, did not take into consideration the fact that the absence of the nitrogen would change the reaction characteristics and temperature within the producer, and affect the steam consumption. Messrs. Hodsman and Cobb used as the basis for their calculations the results obtained for the production of straight coal gas in the Gas Investigations Committee's investigation at Uddingston, because they were the most complete and reliable on hand. They assumed the process of complete gasification to consist of two successive stages: carbonization, followed by gasification of the resulting coke. For the gasification with oxygen they made the assumption that the steam was completely de-

composed (no excess) and that the reaction was entirely to CO and none to $CO_2$, both assumptions being far from practice as indicated by reactions in water gas machines.

In each case the heating value of the resultant gas is too low to meet the legal requirement enforced in this country, and it would, therefore, be necessary to enrich the gas. The best method of enriching such a gas presents an interesting problem. It would require from 2.0 to 2.75 gallons of gas oil per M to enrich it to 500 to 550 B.t.u.'s. The sensible heat in the gases leaving the producer would not be sufficient to gasify the gas oil. It is the idea of all investigators to have the temperature of the gases leaving the producer as low as possible, for improved carbonization of the coal, for the production of a higher quality tar and for increased thermal efficiency. It might be possible to have the gases from the producer pass through a carbureter and superheater into which sufficient oxygen was introduced to burn the amount of gas required to gasify the gas oil. This is similar to the Dayton process, in which oil is burned in sufficient amount to generate the heat necessary to gasify an additional quantity of the oil. Probably the best arrangement at first would be parallel operation of the oxygen producer with an intermittent carburetted water gas installation, the latter supplying a high B.t.u. gas for admixture.

The following are some figures on oil gas made by the Dayton Process using an ordinary gas oil. The second column is based on using 90% oxygen instead of air.

| | Air | 90% Oxygen |
|---|---|---|
| Gallons of oil per M | 5.3 | 12.0 |
| Cu. ft. of oil gas per gallon | 189 | 83.3 |
| B.t.u. per cu. ft. | 500 | 1210 |
| **Gas Analysis** | | |
| Carbon Dioxide | 6.0% | 14.5% |
| Unsaturated Hydrocarbons | 15.9% | 38.4% |
| Oxygen | .1% | 0.2% |
| Carbon Monoxide | 6.7% | 16.2% |
| Hydrogen | 2.3% | 5.6% |
| Saturated Hydrocarbons | 8.7% | 21.0% |
| Nitrogen | 60.3% | 4.1% |
| | 100.0% | 100.0% |

Assuming that the nitrogen in the gas shown in the first column comes from the air, the amount of 90% oxygen that will be required per M of oil gas is 174.5 cu. ft. or 32.9 cu. ft. per gallon of oil. In practice these amounts may be reduced, since there will not be the large amount of nitrogen to heat when using 90% oxygen, as there is when using air.

In order to produce 500 B.t.u. gas it would be necessary to enrich the coal gas from complete gasification (350 B.t.u.) with 17% of oil gas (1210 B.t.u.). For a 550 B.t.u. gas 23% oil gas would be required.

The ability to control the temperature of the hot zone in the oxygen producer is something which may prove to be a problem. During the war, at the Edgewood Arsenal, pure oxygen and carbon dioxide were used with coke in a water gas generator for the production of carbon monoxide. It was found that the reaction between the oxygen and the carbon of the coke took place first, developing an extremely hot zone, and that the reduction of the carbon dioxide occurred higher up in the fuel bed. The result was that the generator linings burned out very quickly. By the use of oxygen and carbon dioxide they succeeded in making 97% pure carbon monoxide. Although the reduction of carbon dioxide is an endothermic reaction as well as the steam-carbon reaction Professor Tour points out that at temperatures above 825°C (1500°F) steam rapidly becomes a more powerful oxidizing agent, (is more easily

reduced by carbon) than $CO_2$. Professor Tour further points out that at Edgewood it was necessary to maintain high concentration of the reaction products (CO) with very low concentration of the reacting gas ($CO_2$) which condition requires cumulatively increasing temperature, whereas in the steam-carbon reaction, excess steam is not objectionable (in that it condenses out) and also a slightly increased $CO_2$ can be tolerated.

Professor Tour believes there would be even less trouble with the temperature in a producer using oxygen and steam than there is at present in the control of an intermittent water gas generator. Such a process he believes would have the advantage of a steady condition of temperature whereas the rising and falling temperature of a water gas generator is largely responsible for the clinker trouble. Professor Tour further believes that in a producer using oxygen and steam the location of the hot zone, the extent of the hot zone, and the temperature of the hot zone would be a function merely of the load placed upon the machine and the proportion of steam and oxygen and that probably clinker and ash removal could be made continuous with little difficulty.

The proposition of using oxygen in gas producers is dependent upon the ability to produce a 90% oxygen cheaply. Whether cheap oxygen in this case means $1.00 per M or 25 cents per M it is difficult to say. The charge against the issuing gas would in each case be respectively 23 cents and 6 cents per M against which should be credited the total overhead and operating cost of the retort benches displaced as well as the decrease in overhead, operation and fuel consumption of the water gas machines superseded. There is no doubt that the cost of oxygen with present day methods is well under the first figure, and probably with the demands made by the gas industry should this process be developed, the last figure can be soon attained.

There is a total of but 3,000,000 cubic feet of oxygen produced per day at present in the country, all in very small installations compared with those the gas industry would need. Some of this is produced by the electrolytic process, but the majority of it is produced by the liquefaction process, which consists of liquefying air and separating the oxygen from the nitrogen by fractional distillation. All of this oxygen is compressed into steel bottles and 95% of it sold for cutting and welding. This oxygen runs 98.5% to 99.2% pure. The cost of producing it may be around $5.00 per M which makes its use for gas making prohibitive. In actual practice, the electrolytic process operates at 60-80% efficiency but has a very high energy consumption since it must decompose water to obtain its oxygen. The efficiency of the liquefaction processes run about 10%. The latter, therefore, affords a great margin in which to increase the efficiency and thereby reduce the cost. It must be remembered that the power charge may be less than half of the final cost of this oxygen and increases in efficiency must not be at the expense of increased overhead or operating charges. Reducing the purity of the oxygen reduces the cost of production in a much greater ratio than the reduction in purity, and this is the reason for considering the use of 90% oxygen; even 85% oxygen would be suitable. Professor Tour estimates the investment cost of an oxygen plant (using the Claude process and producing 90% oxygen in the capacities necessary for making gas) to be $1.00 per

annual 1000 cubic feet of 90% oxygen. The operating cost for such a plant he estimates as follows:

| | Per M of 90% Oxygen |
|---|---|
| Power 20 k.w.h. at 1.0 cents | $.20 |
| Fixed charges of 20% of $1.00 | .20 |
| Labor, Materials, Incidentals | .05 |
| | .45 |

The fixed charges include depreciation of 12½%, interest 6%, taxes and insurance 1½%. Professor Tour believes it fair to assume that the cost of 90% oxygen in large capacities will run under 50 cents per M with present day methods.

The complete gasification of coal by the use of oxygen is the most promising proposition that has been proposed. If 90% oxygen can be manufactured at a cost of 50 cents per M or less, its use in the production of gas assumes a very interesting aspect and the gas industry should proceed to determine the feasibility of the process. A study of this problem would make a very interesting piece of research for some of the students taking fellowship courses supported by the different associations. As stated at the beginning of this paper, the process has never been tried, even on an experimental scale. Experiments should, therefore, be made to determine:

(a) The amount and quality of gas that can be obtained per unit of coal, and

(b) The control of the temperature in the hot zone by the use of steam.

We all can remember the time when there were no flying machines or automobiles. The first flight of a flying machine lasted only twelve seconds, and averaged thirty miles an hour. A short time ago, a flying machine made a nonstop flight from New York to San Francisco in less than thirty hours. When the automobiles first came out, one dared not venture very far from home for fear he might not get back without being towed in. Today a car that will not travel a thousand miles or more without a breakdown is practically no car at all. It is not to be inferred from this that the gas industry is not progressing, but the idea is to bring out more forcibly President Munroe's remarks to the Technical Section in 1921.

The following is taken from an article by Floyd Parsons in the Saturday Evening Post for May 5, 1923, which I believe is appropriate for ending this paper.

"The big lesson in all this is that we have passed the time when it is safe even to say that certain elements have such-and-such qualities. We know now that there is no such thing as a product, a process, or even a faith that does not alter with time. The impossibilities of one decade become the realities of the next. The modern man of business is no longer content simply to have his product the best among its contemporaries, but rather it must be the best among its future competitors. No less far-sighted policy in industry is at all safe. Things made by hand today are made by machines tomorrow."

This process may appear to many of you to be an idle dream, but I believe that it will be eventually worked out on a commercial basis, that is— it will be possible to produce 90% oxygen at a cost of 50 cents or less per M, and to use this oxygen with steam and gas coal in a producer completely gasifying the coal, and leaving only the ash as a residue.

I believe you will all agree that the ideal process for making gas is one in

which the coal is treated in such a way that there will be only gas and ashes produced. The whole object of this paper is to start some of you thinking on this problem of the use of oxygen in the manufacture of gas, with the hope that one of you will solve it, and put it on a commercial basis.

| | Prof. Tour | E. W. Jefferies | H. W. Hodsman & J. W. Cobb Carbonization with Steam | H. W. Hodsman & J. W. Cobb Complete Gasification |
|---|---|---|---|---|
| Cu. Ft. Gas per ton of coal | 63500 | 66340 | 18650 | 61700 |
| Steam required per ton of coal (lbs.) | 1810 | 600 | 118 | 674 |
| Steam required per M of gas (lbs.) | 28.5 | 9.05 | 6.34 | 10.9 |
| Cu. ft. oxygen required per ton of coal | 14350 | 13600 | 2030 | 11000 |
| Cu. ft. oxygen required per M of gas | *226 | 205 | 109 | 178.5 |
| **Composition of gas** | | | | |
| Carbon dioxide | 7.7% | 3.0% | 1.1% | 0.33% |
| Illuminants | .6% | 1.4% | 1.1% | .35% |
| Oxygen | 0.0% | 0.0% | 0.1% | .06% |
| Carbon Monoxide | 51.4% | 58.0% | 41.9% | 63.20% |
| Methane | 5.2% | 7.6% | 14.2% | 4.26% |
| Hydrogen | 32.2% | 28.0% | 38.3% | 30.80% |
| Nitrogen | 2.9% | 2.0% | 3.3% | 1.00% |
| | 100.0% | 100.0% | 100.0% | 100.00% |
| B.t.u. | 341 | 375 | 427 | 352 |
| Specific Gravity | .67 | .65 | .57 | .74 |

*90% oxygen, 10% nitrogen

* * *


## Outline of Instruction in the Testing and Repairing of Gas Meters

**This booklet, which is a second revised edition, is based on the courses given at Iowa State College under the auspices of the Iowa District Gas Association. It is a valuable addition to the literature already available on the subject. Free copies, to a limited extent, and additional copies at 50c each, may be obtained from H. R. Sterrett, Secretary-Treasurer, Iowa District Gas Association, 551 Seventh Street, Des Moines, Iowa.**

# Progress Report of the Committee on Standardization of Capacity of Consumers' Meters

THE COMMITTEE on Standardization of Capacity of Consumers' Meters submits the following report:

*The Committee*

H. S. Bean, Bureau of Standards, Washington, D. C.

W. C. Beckjord, American Light & Traction Co., New York City, N. Y.

Walton Forstall, Philadelphia Gas Works, Philadelphia, Pa.

W. Griffin Gribbel, John J. Griffin & Co., Philadelphia, Pa.

A. H. Hall, Central Union Gas Company, New York City, N. Y.

Donald McDonald, American Meter Company, New York City, N. Y.

T. V. Purcell, Peoples Gas Light & Coke Co., Chicago, Ill.

George Wehrle, Denver Gas & Electric Co., Denver, Colorado.

The above membership represents the largest users and makers of tin case consumers' meters. The Committee has limited its initial effort to tin case meters because it desired to do one job at a time.

*Its Origin*

The Committee was organized in response to a growing demand among meter users that a determined attempt be made towards standardization, primarily of capacities within the same size case, but including, where necessary, dimensions of case or internal parts.

*Its Work and Plan*

The first consumers' meters in this country were of English make. Presumably they served as a pattern for the first meter of American make. Since that day, until the British standard of 1922,[1] construction on both sides of the Atlantic has represented the opinion of the individual manufacturer almost entirely, or possibly his opinion based on what he thought was the need or desire of the user.

Except in the matter of the meter screw only, the user has been slow to recognize the value to him of capacity and case size standardization. Recently, however, as the two and three-part rate for gas emerged from theory into practice, the unnecessary and serious handicap imposed upon the industry by the existing meter situation won sufficient recognition to start a movement which it is hoped will not cease until the end is reached.

The existing meter situation needs to be considered from two points; first, meters in use but no longer made, and second, meters as now made. It is, of course, impossible to know accurately what sizes are still in use, the manufacture of which have been discontinued, but the following table does not err in overstating the number of sizes, nor the variation in the capacity of each size, as the smaller sizes, though shown with one capacity, undoubtedly vary in capacity by as great a percentage as the larger sizes.

**Tin Case Meters Not Now Manufactured But Still in Use.**

| Size | Capacity | Size | Capacity |
|---|---|---|---|
| 3 | 65 | 60 | 475– |
| 5 | 90 | 100 | 600–875 |
| 10 | 140 | 150 | 1015–1350 |
| 20 | 200 | 200 | 1380–1845 |
| 30 | 280 | 300 | 1635–2270 |
| 45 | 315 | | |

It is not surprising that finally an attempt was made to improve in two ways the situation represented by the above table. First, to increase the capacity obtained from a given size of case, and second, to utilize this advantage by decreasing the number of sizes made. In 1907 the A. G. A. was asked to consider a new schedule of capacities, then and now known as the "A" schedule. Unfortunately, the industry as a whole was not then sufficiently interested to study the question and the "A" schedule met with limited adoption and insufficient attention as to its merits or defects. Gradually, however, both manufacturer and user realized that increased capacities were not only obtainable, but desirable, and this resulted in the "B" schedule. As neither the "A" nor the "B" schedule then provided for capacities above 3500 cu. ft. per hour, the "C" schedule, involving a decided departure in construction, was designed by the Peoples Gas Light & Coke Co. of Chicago to meet the need created by the industrial use of gas in large volumes.

Therefore, the Committee today finds that practically all the tin case meters now manufactured are shown in the table below.

**Tin Case Meters Now Manufactured.**

| Size | Capacity | Size | Capacity |
|---|---|---|---|
| 5 B | 150 | 100 B | 1800 |
| 5 A | 175 | 25 C | 2500 |
| 10 B | 250 | 150 A | 3400 |
| 10 A | 375 | 200 B | 3500 |
| 20 B | 450 | 40 C | 4000 |
| 30 B | 600 | 250 B | 5000 |
| 30 A | 875 | 60 C | 6000 |
| 11 C | 1100 | 500 B | 7500 |
| 60 B | 1200 | 500 B | 9000 |
| 60 A | 1500 | 170 C | 17000 |

Except at Chicago, where the "B" schedule is used for sizes below 11 C, users are buying according to either the "A" or "B" schedule. Users of the "A" schedule believe the meters are in general giving increased capacity as compared with the "B" schedule at less first cost per unit of capacity, without undue increase (having reference to economy of investment) in error of registration or shortening of life. Users of the "B" schedule have, in view of the excellent performance of these meters, been disinclined to experiment with increased capacities at the possible risk of poor performance. The limited use of the "C" schedule has followed naturally because of the comparatively few situations needing meters of capacities greater than the 3400 or 3500 cubic feet available from "A" or "B" meters, of not excessive case sizes, from the growing tendency to recognize more fully the advantages of using more than one meter for the very large user, (in other words the use of meters in parallel) and from the conservatism of the average meter user to whom the "C" design seems an unproved mechanism.

From the above description of current meter practice today, it is clear that the work before the Committee consists in bringing together the users of the three meter types and determining what agreement may be possible between the now existing divergent viewpoints. To this end as soon as the Committee was in possession of the facts as to the use of A, B, and C meters it first placed these facts before the A. G. A. membership through a notice in the April Monthly; and second, asked the largest users of the three types whether they were willing to take part in an investigation of each type; and appoint a representative on a sub-committee for such investigation. A prompt and hearty response was forthcoming and the following sub-committee organized:

| Name | Position | Interest Represented |
|---|---|---|
| E. J. Bartel, | Supt. Meter Dept., Brooklyn Union Gas Co. | Brooklyn Union Gas Co. |
| H. S. Bean, | Chief, Gas Measuring Instrument Section, Bureau of Standards, Washington, D. C., | U. S. Bureau of Standards |
| Thos. E. Boyd, | Supt. Gas Meter Division, Denver Gas & Electric Light Co., | H. L. Doherty & Co. |
| W. A. Castor, | Supt. of Meters, Philadelphia Gas Works, | United Gas Improvement Co. |
| G. A. Lane, Ch'rman, | Supt. of Meters, Peoples Gas Light & Coke Co., Chicago, | Peoples Gas Light & Coke Co. |
| J. H. Muller, | Supt. Meter Shop, Consolidated Gas Co. of New York, | Consolidated Gas Co. of New York |
| D. A. Powell, | Supt. of Distribution, Milwaukee Gas Light Co., | American Light & Traction Company |
| J. D. McIlhenny, Jr., | Supt. Helme & McIlhenny, Philadelphia, Pa., | Meter Manufacturer |
| Norton McKean, | Supt. Nathaniel Tufts Meter Works, Boston, Mass. | Meter Manufacturer |
| Walton Forstall, | Chairman, Committee on Standardization of Capacities of Consumers' Meters, | Ex officio |

*Its Progress*

To date only a start has been made on this job of meter standardization, which is as difficult as it is important. The sub-committee hopes to have a meeting in the near future and at that meeting there is good reason to believe a long step will be taken towards the goal. There is no desire to minimize the obstacles in the way, nor to expect that any standard can be put in use over night. Once, however, substantial agreement is reached upon governing dimensions and capacities, everything should naturally follow in the fullness of time. The adoption of any standard may well be coupled with a true schedule for its gradual coming into use and for the equally gradual freeing of the manufacturers from the burden of supplying non-standard repair parts. It is very important to realize that no standard, however carefully considered before adoption, will care for itself, and there should be a standing committee of users and manufacturers charged with this responsibility.

At this writing it is quite uncertain just how definite may be the proposal which the Committee, through its sub-committee, will be able to submit to the Technical Section at the October convention. The Committee believes, however, that the subject is of such great importance and lends itself so well to informal discussion that in addition to the formal presentation and discussion of this report as provided for on the program, there should be an informal meeting at Atlantic City of all interested meter men to consider the work of the sub-committee as of that date.

*Its Recommendations*

The Committee recommends that as a first step in the standardization of tin-case consumers' meters, the following schedule of case sizes and capacities be adopted:

| Single Diaphragm Type | | Double Diaphragm Type | |
|---|---|---|---|
| Case Size | Hourly Capacity | Case Size | Hourly Capacity |
| 5 | 150–175 | | |
| 10 | 250–375 | | |
| 20 | 450 | | |
| 30 | 600–875 | 11-C | 1100 |
| 60 | 1200–1500 | 25-C | 2500 |
| 100 | 1800 | 40-C | 4000 |
| 150 | 3400 | | |
| 200 | 3500 | 60-C | 6000 |
| 250 | 5000 | | |
| 500 | 7500–9000 | 170-C | 17000 |

That the work be continued by next year's Managing Committee.

WALTON FORSTALL,
Chairman, Committee on Standardization of Capacities of Consumers' Meters.

# Report of the Committee on Cast Iron Pipe Standards

In March, the Committee sent a questionnaire to each of the pipe foundries inquiring about the demand for concentric reducers, offsets and the several varieties of quarter, eighth and sixteenth bends. The replies indicated little or no demand for concentric reducers or offsets and for some of the bends, and the information may prove of value in case any attempt is made to adopt joint standards for gas and water special castings.

The American Engineering Standards Committee has appointed a "Special Committee to Consider Approval and Sponsorship of A. G. A. Specifications for Cast Iron Pipe and Special Castings" and on this, the Committee is represented by Walton Forstall.

The Committee recommends a slight change in Bells No. 1 and No. 2 in sizes 4", 6" and 8". This change consists in a longer taper where the bell joins the barrel of the pipe and is desirable to reduce foundry losses now experienced from "checked bells." It will mean changes in dimensions on pages 8 and 9 of the "Standard Specifications" as follows:

Dimensions in inches

| | L | | No. F' | |
|---|---|---|---|---|
| Size | Old | New | Old | New |
| 4" | 1.90 | 3.25 | 1.09 | 2.50 |
| 6" | 2.00 | 3.25 | 1.12 | 2.50 |
| 8" | 2.10 | 3.25 | 1.19 | 2.50 |

No. F' replaces external radius F as shown in cuts on pages 8 and 9.

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(Continued from page 542)

The following is a summary of this tabulation:

*Substitute for Ledger*

Coupon detached from bill (Balto. System) ..... 7

Sales Register ..... 1

*Cash Posting*

Accumulate to due date (Balto. System) ..... 3

Post Daily ..... 6

*Filing*

Currents separate from delinquents (Balto. System) ..... 3

Currents merged with ..... 4

Maintain a card record — practically a duplicate of the meter reading book (Rochester Gas & Electric Corp.) ... 1

In conclusion, it is the opinion of the writer as Chairman of the Sub-Committee that some method of keeping the Sub-Committee apprised of the companies adopting the Baltimore System will have to be devised, and it is suggested that an article be prepared outlining the fact that such a Committee exists, and explaining its duties together with an appeal to the companies who contemplate adopting or who have adopted the Baltimore System to forward such information to the Committee so that correspondence may be entered into with a view of ascertaining the difficulties, and modifications, if any.

*Companies that have adopted or contemplate adopting the system of bookkeeping without books are requested to communicate at once with Mr. W. H. Cassell, care of the Consolidated Gas, Electric Light & Power Company of Baltimore, Chairman of the Sub-Committe on this subject. A complete working exhibit of this system will be shown at the Accounting Section booths in Atlantic City, October 16th to 19th, and members are urged to take advantage of this exhibit and familiarize themselves with the advantages of this system.*

(Continued from page 524)

advertising in order to sell understanding, and you need to sell understanding in order to gain good will.

*Customer Ownership*

With a well-organized publicity campaign, there should be incorporated, wherever possible, the sale of your securities to your customers. This movement started, I believe, in California, and there are today approximately 150,000 customers, owners of public utility securities. This fact had a tremendous influence on the results secured in the defeat of the attempt to socialize the industry in that state. It was my privilege to participate in that campaign, and on my travels through the state I found a better and more sympathetic understanding of public utility problems in communities where the sale of public utility securities had been promoted. This experience also convinced me that the majority of the public, if it has a knowledge of the facts, is fair.

Besides the customers, the employees of the utilities should be, and are being, encouraged to buy their shares. As part owners of a public utility, they at once take a friendly, inquiring attitude toward it, and this, I feel, is the big desideratum.

*Clearer Vision Needed*

It is the attitude of the worker, the attitude of the public, and yet, the attitude of the management, that is often wrong, and that stands in the way of a right solution of all difficulties. Given the attitude of friendliness, of co-operation, and some obstacles that seem to stand as firm as mountains will vanish like the morning mist.

Again, let me say that I make no pretense of standing here in a spirit of superior wisdom, telling you how the public utilities can best be managed. On the contrary, I speak in all humility. I stand here as one of you, a business man sincerely trying to serve his nation and generation, and seeking to discover a solution for some of our difficulties. Because I hold the beliefs that I do, the beliefs that I have just submitted to you, I am a thorough-going optimist. If I believed that because I am right, the other fellow must be fundamentally wrong, if I felt that between the management and the workers, between the company and its public, a great and eternal gulf is fixed, then I would have to be a pessimist. But I hold no such beliefs. Rather, I hold that we are brothers all, working together upon a most glorious enterprise. So great is this enterprise, so much dust and smoke and steam is it stirring up, that we are becoming somewhat blinded by our own progress. We are not seeing everything clearly. Consequently, we are developing differences and quarreling over them.

What we need is not to bang each other's heads any further. On the contrary, we should blow away the dust and smoke which is obscuring our vision. What we need is facts, and a serious consideration of the facts—study, training in the fundamentals of right economic relations, through publicity as to methods and results, and a common interest of management, worker and customer in the work in hand.

# Employment Bureau

## SERVICES REQUIRED

WANTED—A young technical graduate (about 22 to 27 years of age) for general Physical Testing and Research, by a large eastern gas company. Must have a good knowledge of general physics, particularly electrical measurements, and some gas works' experience. Should be able to plan and execute tests and research work, and prepare comprehensive reports thereon. An exclusively chemically educated man not wanted. Give full particulars in the first letter. Address A. G. A.
Key No. 015.

WANTED by a gas and electric company, young man to do office work who has had experience in ledger work, general routine work and especially on the complaint or service desk. In reply, please give outline of experience, references and salary expected. Address:
Key No. 022.

WATER HEATER SALESMEN WANTED—A large gas company needs several good water heater salesmen to work on commission basis in Western Pennsylvania. Exceptionally good territory.
Key No. 026.

TECHNICAL GRADUATE—Wanted, a young technical graduate by a large Eastern Gas Company for newly organized industrial and housheating department. Excellent opportunity for advancement. Give full particulars in first letter.
Key No. 028.

WANTED—Man for Assistant Gas Superintendent. Water gas only. Approximately 7700 meters. Yearly send out 250,000,000 cu. ft. Should have technical training, as well as practical experience. Excellent opportunity for advancement. Cover details of experience as fully as possible in reply. Also give age and salary expected. Address A. G. A.
Key No. 030.

INDUSTRIAL SALESMAN—Wanted, Industrial and househeating salesman for Eastern Gas Company having an attractive gas rate. State experience and salary desired.
Key No. 029.

INDUSTRIAL SALES ENGINEER— Wanted, high grade industrial sales engineer with knowledge of house heating desirable, New England Gas Company having an attractive gas rate has need of such a man and requests applicants to give full particulars as to ability, experience and salary desired.
Key No. 027.

WANTED—Foreman for main laying gang. Must be experienced in laying 4" to 12" cast iron main and able to handle main repair work on low and medium pressure lines. Location, New Jersey coast. State age, experience and wages expected. Address A. G. A.
Key No. 031.

WANTED—Young man able to test and adjust prepayment and ordinary gas meters. Address, Con. Gas Co. of N. J., Long Branch, N. J. Atten. C. D. Snyder.

## SERVICES OFFERED

WANTED—Position of responsibility as Manager or Industrial Fuel Engineer—18 years varied experience in the gas business. References and service record furnished. Address A. G. A.
Key No. 142.

POSITION WANTED—By-Product, Coke-Oven Executive seeks more responsible connection. Fitted for Chief Chemical Engineer. Assistant-Superintendent or Assistant to Manager. University Graduate. Alexander Hamilton Institute Graduate. Nearly seven years with present 3000 ton plant. Thirty-two years old. Married. Address A. G. A.
Key No. 151.

YOUNG MAN 27 years of age, seven years' experience with president of combination gas, electric, and street railway property, town of 40,000 people, desires new connection. Thoroughly experienced in the handling of correspondence and the compilation of financial, statistical and operating reports and statements, as well as the general work in connection with public utility corporations. Address A. G. A.
Key No. 153.

WANTED—Am open for a position of greater responsibility. At present manager of gas company in city of over 5000 gas consumers. Experience consists of four years as manager and eleven years in operating, construction and distribution. Age 39, married. Address A. G. A.
Key No. 157.

ENG.-SUPT. of one of the largest gas plants in the country would consider change. Desires to locate with company in which opportunities for future advancement are better than in present position. Is a married man. Has technical University training. No particular preference as to location. Address A. G. A.
Key No. 159.

WANTED—Position as manager of small gas plant (about 10,000 meters) or sales manager of larger plant. Can furnish the very best reference.
Key No. 158.

WANTED—To locate with gas company or combination gas and electric company, large or small, in the capacity of manager or superintendent. At present manager of Eastern company, possessed of wide experience operating, exceptional ability, unimpeachable character and pleasing personality. New Jersey or Delaware preferred, an interview will be agreeable. Address A. G. A.
Key No. 161.

ENGINEER—Eighteen years' experience, largely in combination gas and electric plants. Past six years chief engineer large gas plant. Responsibilities covered design construction and operation of plants and distribution syatems. Technical graduate. Desires position of engineering responsibility. Address A. G. A. Monthly.
Key No. 163.

WANTED—Am open for position as general superintendent, engineer or manager of fair sized property. Fifteen years' experience in combination coal and water gas plants. Experience covers vertical and horizontal coal gas installations, also distribution work. At present am managing plant of five million sendout and have been acting in capacity of assistant engineer. Can furnish excellent credentials from present and past employers. Married. Can report with reasonable notice. Address A. G. A. Monthly.
Key No. 164.

WANTED—To locate with gas company or combination gas and electric company, large or small, in capacity of Auditor. At present Accounting Officer of New York State company having approximately 20,000 consumers. No particular preference as to location. XYZ
Key No. 165.

POSITION WANTED—As Supt. of small gas company or as General Foreman of large plant. Approximately seventeen years' experience in all branches of manufacture and distribution, high and low pressure systems. Address A. G. A.
Key No. 166.

AVAILABLE—Man of executive ability, experienced in all phases of the gas business and sales and advertising work including agency work on National accounts. Capable of creating, planning and following through all forms of advertising. Prefer locating in West or South Atlantic states. Minimum salary of $4,000. Address A. G. A.
Key No. 167.

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